THE DOCK & HARBOUR AUTHORITY

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Editorial

Official Opening of New Corporation Quay, Sunderland.

The new Corporation Quay at Sunderland, which has taken nearly four years to construct at a cost of £350,000, was officially opened on October 10th by Sir John Priestman, Bt.

The quay is situated nearly half a mile from the open sea and was constructed for the purpose of affording the rapid loading or discharging of cargo without the delay which is more or less customary at docks which are affected by tides.

The new quay is 1,062 ft. long, with a depth of water of 30 ft. at L.W.O.S.T. and 44 ft. 6 ins. at H.W.O.S.T. and covers an area of 6 acres.

A two-storey reinforced concrete warehouse and transit shed has been constructed at the west end of the quay, and this has a length of 300 ft. and a width of 75 ft. and railway tracks back and front.

The ground floor of this building is equipped with two under-hung travelling and transversing electric cranes of one ton capacity each, and the quay itself is equipped with three electric level luffing cranes of 5 tons capacity each, which can deliver goods from or to both floors of the transit shed and warehouse. Steam travelling cranes are also provided to assist in unloading cargoes or transferring goods to road or rail when required.

An electric coal conveyor has also been installed and this can deliver coal to ships at the rate of 600 tons per hour, and is situated near the seaward end of the new quay. Arrangements have also been made for supplying oil bunkers to vessels requiring them and these are expected to be ready for use early next year.

An illustrated article giving details of the construction of this new quay appears on another page in this issue and the Corporation Quay also forms the supplement for this month.

Port of Melbourne, Australia.

The State of Victoria, Australia, which has just celebrated its centenary, has as its capital Melbourne, whose port covers an area of 20 square miles or about 4½ miles square.

The Port of Melbourne has in the last twenty years made considerable improvements for the purpose of developing the port, more especially with regard to dredging the channels to obtain increased depth and the construction of new docks and wharves. In the course of twenty years' dredging of the channels and waterways there have been nearly 42 million yards of material raised at a cost of nearly £2,000,000.

An illustrated article giving details of the improvements carried out at the Port of Melbourne during the past twenty years is included in this issue.

Southampton Docks Extension Scheme nearing Completion.

The huge Southampton Docks Extension scheme which, commenced in 1927, is now in its final stages, is expected to be completed by the end of next year. Both pairs of Transit Sheds upon which work was recently started will be ready for use in the early autumn of 1935. A new 7,000-ft. road behind the deep water quay wall is to be completed by June 15th, 1935, and railway lines giving access from Millbrook to the sheds and estate will be brought into use early in July.

Busy Season at the Hull Docks.

The seasonal activity at the Hull Docks is beginning to wane, and the heavy pressure on the Victoria Dock in particular, caused by the increased timber imports, has been overcome. It is hoped to overcome, if possible, next year, the abnormal delays occasioned to timber-carrying vessels during the past few months, and with this object in view an experiment has been undertaken in order to secure the more expeditious handling of wood cargoes when landed. In one instance, a whole cargo was removed in three weeks, as against seven or eight weeks, as has been the rule. Railway and dock officials and importers and stevedores have applied themselves with energy to the problem, a solution of which it is hoped to hammer out before the next importing season. The imports of timber (hewn and sawn) at Hull at the end of September were no less than 872,868 loads, an increase of 130,921 loads at the corresponding date last year, and there is now every reason to anticipate that the million loads will again be exceeded before the year closes. Russian wood has again loomed large in the arrival list, over 80 cargoes having come to hand from Leningrad and the White Sea. Imports of grain, however, lag behind a year ago. The total of wheat and kindred cereals for the nine months is 936,000 tons, or 116,264 tons less than in the corresponding period last year. On the other hand, oilseeds at 467,354 tons show an increase of 76,000 tons.

There is also a decline of about 8 per cent. in the arrivals of petroleum at the Saltend Oil Depot. On the export side the use of the coal shipping appliances does not increase. The quantity of coal now being exported from Hull and the sister ports on the Humber is only about half of the total prior to the Coal Mines Act. In the past three months the exports of coal (foreign) from the Humber amounted to 805,695 tons, bringing the total for the nine months up to 2,428,525 tons, or 70,216 tons more than the January-September period of last year. Apart from the restrictions imposed by the Coal Mines Act, reduced quotas abroad have materially affected exports from the Humber, notably in the cases of Germany, France, Belgium, the Netherlands and Italy. In addition to the exports, shipments of bunker coal on foreign-bound steamers has exceeded a quarter of a million tons per month.

Annual Report of the Port of London Authority.

The twenty-fifth annual report of the Port of London Authority for the year ended March 31st, 1934, shows a deficit on the year's working of £1,759.

The total net register tonnage of vessels arriving and departing with cargoes and in ballast for the year ended December 31st, 1933, was 56,480,004, this being an increase of nearly 2,600,000 tons as compared with 1932 and an increase of 400,000 tons as compared with 1931. The values of the total imports and exports (excluding coastwise goods and transhipments under bond) for the year ended 31st December, 1933, reached £406,045,615, which compared with the figures for 1932, which were £409,371,649, shows a decrease of £3,326,034 or 0.8 per cent.

The tonnage of imports and exports, foreign and coastwise, for the twelve months ended 31st March, 1934, totalled 36,768,618 tons, this being an increase of 2,446,756 tons or 7.1 per cent. as compared with the previous year.

There was an increase both in imports and exports, the import figures for 1934 being 30,455,861 tons or an increase of 2,114,080 tons or 7.5 per cent. as compared with 1933. Exports totalled 6,312,757 tons, or an increase of 332,676 tons or 5.6 per cent. over the previous year.

The Port of London Authority landed or received 2,112,596 tons of import goods for warehousing or for immediate delivery during the twelve months ended March 31st, 1934, this being an increase of 110,706 tons or 5.5 per cent. as compared with the tonnage dealt with for the previous year.

The result of the year's working, as mentioned above, shows a deficit of £1,759 after taking off interest charges from the balance of revenue. The total revenue received was £5,324,929, this being an increase of just over £150,000 as compared with the previous year, and the total expenditure was £3,872,276, this being an increase of £24,000 as compared with the previous twelve months. The balance of revenue over expenditure on the year's working was £1,452,653 which, after taking off interest on port stock and temporary loans, sinking fund charges, etc., less interest, etc., receivable, which amounted to £1,454,412, left a deficit of £1,759 on the year.

Clyde Navigation Trust

Part Restoration of Wages Cut

AT the September meeting of the Clyde Navigation Trustees there was a lively discussion on the question of restoring the 5 per cent. cut imposed three years ago.

The Chairman, Mr. W. F. Robertson, submitted the recommendations of the General Purposes Committee restoring fully the 5 per cent. cut to employees earning £2 10s. per week or less, and that as regards employees in sections of the service where rates of pay are not governed by trade union awards, and as regards the salaried staff, the cut be reduced from 5 per cent. to 2½ per cent.; that as regards employees in sections of the service where rates of pay are governed by trade union awards the short-time working be restricted to three hours per week less than ordinary time, and be applied so that men employed at the Renfrew workshops and the Harbour workshops and in causewaying do not work on Saturdays; and that these modifications have effect from the first full pay-week in October in respect of weekly-paid employees and from October 1st in respect of the salaried staff.

These proposals met with lively opposition, and an amendment was proposed by Mr. John Stewart to the effect that the full restoration of cuts should apply to employees with a salary of £350 or under.

In a critical speech, Mr. Stewart accused the Committee of dealing with the matter in a niggling manner. He pointed out that the Clyde Trust had been one of the first bodies to make the cuts, and it appeared that they were apparently to be one of the last to restore them. He suggested that as the actual cost would only be some £6,340 the Trustees should do the right thing by their employees and remove the hardships under which they had laboured and had submitted to so loyally during the past three years.

Supporting the amendment, Bailie Hector McNeill accused the General Purposes Committee of not having dealt with the question, on behalf of the employees, in the way they might have done, or met the request of their workmen. He stated that he had attended, by invitation, a large meeting of the employees of the Trust, at which he had learned a number of things which left no doubt in his mind that the Trust was not being administered in the way it should be. He was of opinion that the time was drawing near—if it had not already come—when a complete investigation should be made into the whole administration of the Clyde Trust, and of all the Departments associated with it. He alleged that information was withheld from the Trustees which they ought to get, and in regard to this particular question, he stated that if full and correct information had been laid before them the Trustees might be in a position to come forward with a more generous gesture. For this he blamed the official responsible for guiding and advising the Committee in matters of this kind.

Provost Smart proposed an alternative amendment that the restoration of cuts should apply to employees with a salary of £5 a week and under, and as a compromise this was accepted by Mr. Stewart and Mr. McNeill.

Replying to the discussion, Mr. Robertson, the Chairman, pointed out that reference had been made to the surplus which had been described as large but which was relatively small. It was still early in the financial year, and he asked that the Committee's recommendations should be passed, pointing out that it did not in any way prevent the question being reopened at a future date.

The Committee's recommendation was passed by 22 votes to 9.

Congratulations on the Launch of the Cunarder "Queen Mary."

The Chairman, referring to the recent launch of the "Queen Mary," said that it was fitting that the Trust should extend to Sir Thomas Bell, of Messrs. John Brown and Co., and his colleagues their congratulations on the perfect launch of this vessel. If there were people who had any doubt as to the Clyde being asked to carry more than it could, he thought such fears must have been dispelled when they saw how quickly that vessel had been brought to a standstill almost as soon as she was waterborne. The launch had shown that the Clyde is good enough for a long time to come to maintain its place in shipbuilding and engineering.

Annual Reports

The Port of Rangoon.

The annual report of the Commissioners for the Port of Rangoon for the year ending 31st March, 1934, shows that the year's working resulted in an excess of expenditure over income of Rs.1,23,433. The income for the year amounted to Rs.70,88,855, this being an increase of Rs.2,06,301 over the figures for the previous year, and expenditure for the year under review amounted to Rs.72,12,288, this being an increase of Rs.1,36,191 over the previous year.

The increase in income was chiefly due to dues on goods and dues on vessels and the expenditure increase arose under the heading of interest and sinking fund charges.

The number of vessels that arrived during the year under review was 1,652 with a total net register tonnage of 4,229,161 as compared with 1,591 vessels of 4,110,458 net register tons in the previous year. The number of vessels leaving the port was 1,642 with a net register tonnage of 4,216,994, as compared with 1,599 vessels with a net register tonnage of 4,116,127 in the previous year.

The seaborne trade of the port for the year under review showed that 5,066,333 tons were handled, these being composed of imports 1,100,397 tons, exports 3,943,952 tons, and transhipments 21,984 tons. The seaborne trade showed an increase of 443,047 tons over those of the previous year.

The Port of Chittagong.

The administration report of the Commissioners for the Port of Chittagong for 1933-34 shows a very satisfactory year's working as compared with the previous twelve months.

The total net revenue for the year under review amounted to Rs.3,86,871, this being an increase of Rs.2,39,615 over the revenue for 1932-33.

The receipts amounted to Rs.8,02,518 or Rs.2,51,148 more than the previous year, and expenditure was Rs.4,15,647, this being an increase of Rs.11,533 on the previous year.

The large increase in receipts was due chiefly to the abnormal imports of rice and paddy, increased exports of jute and also to the levy of a surcharge of 12½ per cent. on Port and River Dues from the beginning of September, 1933.

During the year 843 vessels with a net register tonnage of 589,652 entered the port, as compared with 837 with a net register tonnage of 555,873 in the previous year.

Karachi Port Trust.

The administration report of the Karachi Port Trust for the year ending 31st March, 1934, shows that the ordinary revenue receipts for the year (including Rs. 1 lac from Sinking Funds) were Rs.61,94,000 as against Rs. 59,22,000 in the previous year, this being an increase of 4½ per cent. There were special receipts during the year amounting to Rs. 62,900.

The revenue account expenditure on ordinary items amounted to Rs.65,71,000 (including Rs. 1 lac transferred to special revenue account for capital works and Rs. 1 lac in excess of normal for pensions and gratuities to retiring employees due to retrenchment by voluntary retirement) as against Rs.62,91,000 in the previous year, this being an increase of 4½ per cent.

The year's working showed a loss of Rs.3,14,000 (taking into account the special receipts of Rs.62,900) as against a loss of Rs.2,86,000 in the previous year.

The total volume of imports and exports was 1,617,000 tons, a decrease of 2.6 per cent. on the previous year's figure of 1,659,000 tons. Imports amounted to 724,000 tons, a decrease of 2.9 per cent. on the previous year's figure of 745,000 tons, while exports were 893,000 tons or a decrease of 2.3 per cent. on the previous year's figure of 914,000 tons.

There were 850 vessels entered the port during the year with a net register tonnage of 2,201,878, as compared with 830 vessels of a net register tonnage of 2,101,077 entering the port in the previous year. Clearances accounted for 845 vessels of a net register tonnage of 2,191,147, as compared with 836 vessels of a net register tonnage of 2,119,231 in the previous year.

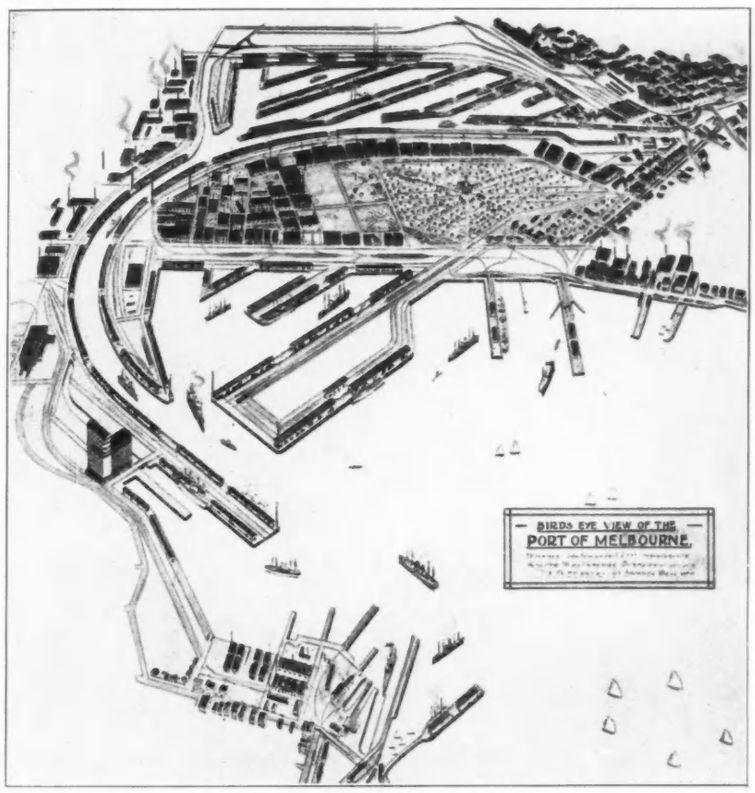
The Port of Melbourne, Australia

Melbourne, the Capital of Victoria, is on the River Yarra, which falls into Hobson's Bay at the Head of Port Phillip. Lat. 37° 49' 53" S.; Long. 144° 58' 30" E. It has an Area of 196.47 square miles and a Population of 1,030,750

The Melbourne Harbour Trust.

THE TRUST was constituted under an Act passed in 1876, as a result of public agitation and demands extending over a period of 34 years, to the effect that the cost of landing goods should be reduced, and the delays in receiving goods should be abolished. Both demands arose from the fact that vessels having a draft of more than 12 ft. had to discharge into lighters in the bay.

The Melbourne Harbour Trust Act, 1876, was drafted on the lines of similar institutions in Great Britain, such as the Thames Conservancy, the Mersey Harbour Board and the Clyde Trust.



Bird's-eye View of the Port of Melbourne, showing present and contemplated Port Improvements.

The constitution of the Trust was altered in December, 1912, by the passing of Act No. 2449. The former Commissioners, consisting of 17 members—5 appointed by the Governor-in-Council, the remainder being elective—were superseded by a Commission of 5 appointed by the Governor-in-Council, consisting of a chairman, who shall devote the whole of his attention to the business of the Trust, and 4 other representatives, respectively, of the interests of ship owners, exporters, importers and primary producers.

By Proclamation the Act referred to came into operation on January 23rd, 1913, and the following appointments were made:—

Mr. G. F. Holden, chairman; Mr. W. T. Appleton, Hon. J. A. Boyd, Mr. (who later became Sir) W. M. McPherson, and Mr. D. McLennan, representing respectively the Owners of Ships, Exporters, Importers and Primary Producers, as from February 4th, 1913. Mr. McPherson resigned in February, 1914, and Mr. Henry Meeks was appointed to represent the interests of the importers in his stead. On the death of Mr. Henry Meeks, in August, 1922, Mr. W. Andrews was appointed, and on the death of Mr. Andrews in September, 1924, Mr. F. Duncan was appointed to represent the interests of the importers on September 9th, 1924. Mr. W. T. Appleton died in February, 1930, and Mr. D. York Syme, Jnr., was appointed as the Shipowners' representative in his stead.

Borrowing Powers.

The borrowing powers of the Trust are fixed by the Parliament of Victoria, and in 1883 the limit was fixed at £1,000,000; this was increased in 1890 to £2,000,000; it was increased again in 1912 by Act No. 2449 to £3,000,000. In December, 1925, owing to the great growth of the port this sum was further increased to £4,000,000 by Act No. 3429, and in December, 1929, under the authority of Act No. 3847, it was still further increased to £5,000,000, which is the borrowing power of the Commissioners at the present time.

Port Phillip.

Shipping under orders to call at the Port of Melbourne must of necessity navigate Port Phillip (Lat. 38 degs. 18 mins. S., Lon. 144 degs. 38 mins. E.) which is under the jurisdiction of the Ports and Harbours Department, Victoria, with the exception of Corio Bay, the Port of Geelong, which is controlled by the Geelong Harbour Trust.

This is an extensive bay having a tidal area of approximately 725 square miles. It is about 31 miles long north and south, by 20 miles wide at the middle, where, on the west side, it forms an arm which extends W.S.W. for 15 miles to Geelong. At the north end of the Bay the waters contract, forming the portion known as Hobson's Bay.

The entrance to Port Phillip Heads, between Points Lonsdale and Nepean, is 1¾ miles wide, but the reef projecting from these Points reduces the navigable channel to a clear width of approximately 6 cables. The channel in the centre is 1,000 ft. wide, and has a depth of 43 ft. The depth for 900 ft. from the western limit of the 43 ft. channel and 1,000 ft. from the eastern limit is at least 37 ft. A proposal is in hand to increase the depth of the channel on the western side of the 43 ft. limit from 37 ft. to 43 ft., for a width of 1,000 ft. This work will take from two to three years to complete.

For 2½ miles within Port Phillip Heads, the entrance is deep and free from danger, after which the Bay widens out and is filled with numerous sandbanks extending to 8 miles to the northward and 12 miles to the eastward. Between these banks are four channels, viz., South, West, Symond's and Cole's.

The South and West Channels are those used by vessels other than light draft craft, and the following table shows the distances, in nautical miles, from the Heads to the Melbourne wharves and Geelong, and also the distance from Melbourne to the Geelong wharves:—

	To Entrance to River	To Melbourne Wharves
From Port Phillip Heads via West Channel ...	30.9	35.9
From Port Phillip Heads via South Channel ..	42.1	47.1
From Geelong Wharves via Light Draft Track	33.3	38.3
From Geelong Wharves via Heavy Draft Track	34.7	39.7

	To Geelong Wharves
From Port Phillip Heads via West Channel ...	33.9
From Port Phillip Heads via South Channel ...	48.4

The Port of Melbourne.

The Port of Melbourne, as vested in the Melbourne Harbour Trust Commissioners, consists of inlets, rivers, bays, harbours, and navigable waters north of and within a line bearing north 74 degs. 6 mins. east from a point marked by a post situated on the western shore of Hobson's Bay, opposite the eastern end of Little Nelson Street, Williamstown, to a point off the eastern shore of Hobson's Bay, in line with the prolongation of the centre line of Fraser Street, St. Kilda, which is approximately 120 ft. west of the Sea Wall at St. Kilda, and 600 ft. north from the shore end of the St. Kilda Pier, including the foreshore from Fraser Street, St. Kilda, westerly to the River Yarra, that river and land adjacent thereto as far as the Spencer Street Bridge, the Maribyrnong River, as far as the Hopetoun Bridge, at Hopkins Street, Footscray, and also the channels leading to Williamstown and Port Melbourne for a distance of about 3½ miles below the line drawn from Williamstown to St. Kilda.

The Port of Melbourne, Australia—continued

The port covers an area of 20 square miles, or about 4½ miles square.

All the wharves and piers within these boundaries are under the control of the Commissioners.

General Characteristics.

In the River Yarra and Hobson's Bay the weather conditions are of a variable character, the winds from any quarter do not prevail for any length of time (a change coming usually within 24 hours), and seldom exceeding two days. Northerly winds occasionally blow with considerable force, and a change is sometimes accompanied by heavy squalls from the south-west for a short period, after which it moderates rapidly.

Strong winds of a dangerous nature are exceptionally rare in this port, although occasionally strong westerly and southerly gales are experienced on the coast and in Port Phillip.

The tidal currents in Hobson's Bay are weak, and their direction mostly dominated by the prevailing wind. The mean spring tide is about 2 ft. 6 in., although double that figure has been recorded when influenced by continuous strong south to west winds, north-easterly winds having the opposite effect.

The waters of the River Yarra are almost continually running outward, there being practically no flow in during flood tide, the rise of the sea level merely banking up the waters of the river and checking the outflow. Under the influence of strong west to southerly winds, however, an upstream current is caused, but it only extends to a few feet below the surface, and exerts little or no effect on other than very light draft vessels.

The normal rate of outflow is from one to two knots per hour. This is slightly accelerated during heavy rains.

Development of the Port.

In 1879 a report dealing with the improvement and development of the port was issued by Sir John Coode, an English Engineer, who had been engaged by the then Commissioners for the purpose.

This report recommended:—

1. The cutting of a new channel through the flats to the south of Fisherman's Bend.
2. The construction of a wet dock at West Melbourne.
3. The widening and deepening of the river channel.

The report was adopted by the Commissioners, and the work entailed in carrying out the various recommendations was commenced immediately.

The Coode Canal, 2,002 yards in length, having a depth of 20 ft. at low water, was completed in 1886.

The Victoria Dock, four miles up the river, with an area of 96 acres, was opened in 1892.

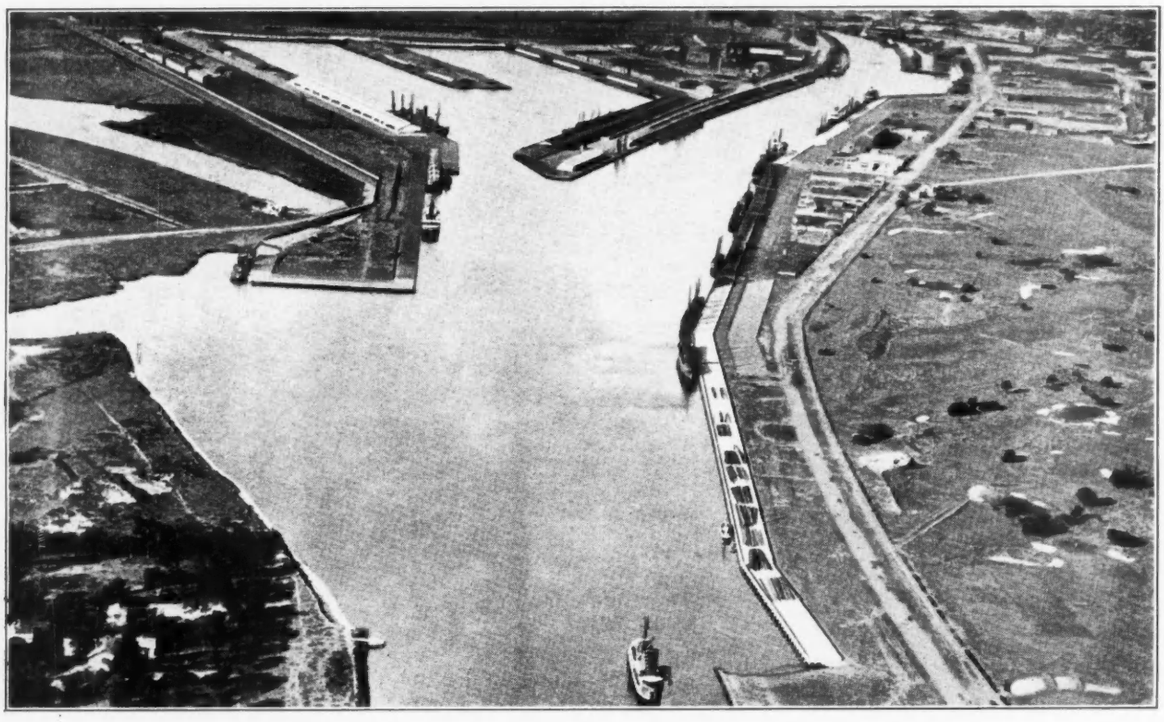
The river, which had a depth of 12 ft. 6 in. at low water, with a width of 140 ft., was deepened and widened.

Prior to 1889 all mail steamers and vessels of heavy draft had to lie at anchor in the Bay, and there discharge into lighters. One of the first works undertaken by the Commissioners was to make the railway piers at Williamstown available to these vessels.

In 1893 a channel over 8,000 ft. long and 600 ft. wide was constructed, running in a southerly direction from the Port Melbourne Railway Pier, and having a navigable depth of 28 ft.

Further Improvements to the Port of Melbourne.

When the Trust was reconstituted in 1913, the new Commissioners set out a definite policy regarding general improvements to the Port of Melbourne, and these have been dealt with in sections, as follows:—



River Yarra Berthage, showing entrance to future Appleton Dock in foreground.

Part 1—Navigable depths of channels.
Part 2—Widening River Yarra and Swinging Basin.
Part 3—Improvements on north side of river, between Victoria Dock and Maribyrnong River.
Part 4—Improvements at Port Melbourne and Williamstown.

Part 1: Navigable Depths of Channels; Deepening Waterways

The policy of the Commissioners in regard to navigable depths is as follows:—

1. The main channel leading to the Harbour of Melbourne is to be dredged to 37 ft. at low water for a width of 600 ft.
2. This depth is to be continued in the Yarra to within a reasonable distance of the Spotswood Tunnel, with provision for a similar depth for deepsea berthage accommodation east of the entrance to the river, and on the western side of the river at the entrance. Structures on the 37 ft. cut to be such as will allow of deepening to 40 ft. if required.
3. From the tunnel to Johnson Street, and in Appleton Dock and the Victoria Dock, 32 ft. to be provided, with provision for a similar depth to the new berths in the River Yarra.
4. From Johnson Street to Spencer Street, 27 ft.
5. The berths between Spencer Street and Queen's Bridge being reserved for light draft vessels.

The work enumerated by this policy was undertaken in stages, first down to 30 ft., and ultimately to the depths as stated. To expedite the work, the dredging and towing plant worked double eight-hour shifts, as from 1st November, 1913, to 29th December, 1920, when, owing to scarcity of coal, dredging operations were suspended. On 10th March, 1921, dredging was resumed, introducing three eight-hour shifts, so that the deepening of the channels might be further speeded up. Early in the year 1929 one bucket dredger was withdrawn from commission as the progress made warranted it. For the

The Port of Melbourne, Australia—continued

same reason the suction dredger "Lady Stanley," on hire from the Ports and Harbours Department, was put out of commission in August the same year, preparatory to being handed over to her owners. By the end of the year 1930, because of the satisfactory progress made there were but two bucket dredgers, with attendant plant, in commission. The main channel has been dredged to 34 ft. over its full length and width, and work is proceeding to attain the depth required. The plant has worked three shifts continuously since its inception, except when operations were suspended owing to scarcity of coal due to strikes.

The estimated cost of the completed work in 1913 was £946,567, plus £200,000 for additional plant, plus £41,466 for dredging in areas outside Trust's boundary; £1,188,033 in all.

The total quantity of material raised in capital dredging during the twenty years under review, is 41,895,475 barge yards, and the expenditure £1,974,263.

The costs are actual dredging costs, and no not include anything for interest, depreciation, overhead charges, etc. Adding the usual standing charges, the cost for the twenty years is £2,368,638.

In addition to the dredging for deepening, 19,106,133 barge yards were raised in maintaining depths, costing £800,551, which, when standing charges are added amounts to £958,502. The total quantity raised during the twenty years is thus 61,001,608 barge yards, being nearly three times the quantity raised during the previous twenty years—22,047,228 barge yards.

The average cost, excluding standing charges, per barge yard of spoil raised and deposited for the previous twenty years was 6.43d., while that for the period under review was 10.06d. The increased cost is due to dredgers working deeper, heavier material being lifted and increased repair costs, and wages.

The work done in carrying out the above policy for the 20 years' period from January 1st, 1913, to December 31st, 1932, is as follows:—

	Yards Raised	Expenditure
Port Melbourne Piers and Channels being dredged to 37 ft.	15,979,889	£619,428
Williamstown Piers and Approaches to 34 ft.	5,668,774	£260,139
River Yarra, Maribyrnong River and Approach Channel to 32 ft. ...	13,994,011	£723,936
Victoria Dock Entrance to 32 ft. ...	2,141,309	£103,824
Appleton Dock to 32 ft.	3,894,292	£261,651
Holden Swinging Basin to 32 ft. ...	117,200	£5,285
Totals ...	41,895,475	£1,974,263

Part 2: Widening of River Yarra and Enlargement of Swinging Basin.

The proposals agreed upon by the Commissioners to enlarge the Interstate Swinging Basin (previously known as the Middle Swinging Basin), and to set back the South Wharf between the Basin and the eastern end of Coode Canal—a distance of 4,500 ft.—sufficiently to widen the river from 300 ft. to 400 ft., have matured. While work was proceeding on the new wharves, the old structure was demolished, and dredging was carried out as the widened area became accessible.

The work comprised:—

(a) Interstate Swinging Basin enlarged from 550 ft. by 800 ft. to 700 ft. by 1,000 ft.

(b) Timber wharf at the Swinging Basin, 1,850 ft. long by 40 ft. wide.

(c) Wharf 3,490 ft. in length by 40 ft. in width, with concrete sheet piling from Old Lime Dock towards the Interstate Swinging Basin.

(d) Wharfage 990 ft. long, consisting of reinforced slabs on timber piles anchored to a reinforced relieving platform. This links up the wharf previously constructed lower down the river with the wharf at the Swinging Basin.

(e) Reinforced concrete wharf, 1,008 ft. long, connecting with the wharf referred to in (c) on the downstream end. This wharf is of a type entirely new to the Port of Melbourne. It is wholly of reinforced concrete, and consists of a beam and slab platform on reinforced concrete piles, carrying an earth fill confined by front and rear retaining walls. On top of this fill, a deck of reinforced concrete has been placed.

This class of wharf has been developed to give latitude in the distribution of loading on the surface, and practically eliminates concentrated loads on the structure, thus avoiding the definite locating of the future position of rails or other supports for concentrated loads. Reinforced piles 17 ins. by 17 ins., are driven in bays of six piles. Four are spaced at 9 ft. centres, driven vertically, and the remaining two (at the rear of the wharf) at 8 ft. 7 ins. from the others, and about 3 ft. apart, driven so as to splay out at batters of 1 in 2½ forwards, and 1 in 5 backwards. The pile bays are 6 ft. 6 ins. centres.

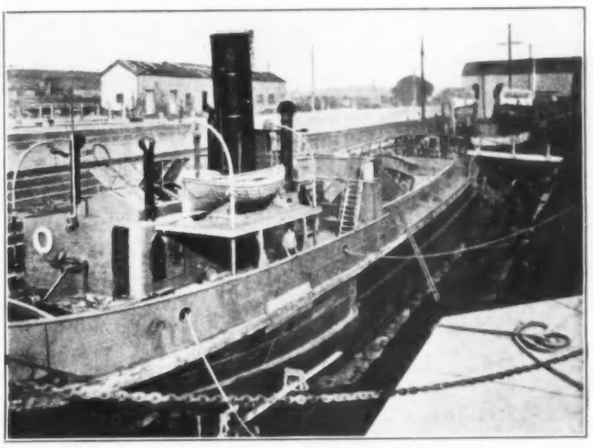
Eight main rods, placed at the corners and in the centre of the sides with hoops and spiral binding, constiute the reinforcement of these piles, which support a 17-in. by 28½-in. traverse beam, reinforced with straight and bent-up rods and stirrups. From this beam a 9-in. reinforced concrete slab is hung, forming the platform to carry the fill.

A wall, 5 ft. 9 ins. high and 17 ins. thick, along the front, forms the wharf face, and confines the fill and a light wall at the rear serves the same purpose. The face of the wharf is protected by timber piles driven on a slight batter, and connected by horizontal walings. A line of sheet piling, 10½ ins. thick, reinforced and driven between the centre row of main piles, retains the backing.

The main piles vary in length, from 47 ft. to 33 ft., and are driven so as to be 16 ft. into clay.

(f) An extension of 1,456 ft. to the 1,008 ft. reinforced wharf.

This wharf is of "the earth-filled-balanced-reaction" type, 45 ft. wide, with deck surface at R.L.11.5 above low water, and is protected in front by horizontal walings affixed to fender piles. It has been designed to permit of superficial loads of 6 cwts., and any arrangement of 20-ton motor trucks, or E.50 railway loadings.



Alfred Graving Dock, Williamstown.

The accommodation enumerated above is considered sufficient to meet requirements on the south side of the river for some years, providing as it does 16 berths below the Interstate Swinging Basin, with a total berthage space of 6,944 ft. The cost of the completed works, the greater portion of which is being availed of by the Coal and Timber trades, was £483,194.

Part 3: Improvements on North Side of River, between Victoria Dock and Maribyrnong River.

The scheme approved for these improvements makes provision for the construction of four docks, covering an area of 800 acres, and when completed should provide accommodation for the river trade for upwards of 35 years.

No. 1 Dock, adjoining the Victoria Dock, on which work has commenced, is named the Appleton Dock, and will provide 21 additional berths, including those forming the entrance, which should be sufficient for this trade for the next 10 to 15 years. This dock will have a total area of 73½ acres and a berthage space 9,840 ft. and is estimated to cost £2,186,000.

Of the four docks provided for, three will be served by one common entrance, 250 ft. in width, situated at the junction of the Yarra and Maribyrnong Rivers. The remaining dock referred to as the Appleton Dock will be served by a separate entrance 200 ft. in width. The depth of water throughout is shown as 32 ft.

North Side Berths.

On the northern side of the river, between the entrances to the Victoria and Appleton Docks, new berthage accommodation has been provided. These berths, known as Nos. 22, 23 and 24 Victoria Dock, comprise 1,710 ft. of wharfage, capable of accommodating three of the largest vessels that navigate the river. Three sets of railway tracks have been placed on the structure which is of sufficient strength to carry travelling cranes, motor trucks and loads of a gross loaded weight of 9.7 tons.

The area at the back of these berths has been reclaimed by depositing thereon spoil dredged from the entrance to the

The Port of Melbourne, Australia—continued

Appleton Dock. Upon the land so reclaimed, sheds 80 ft. in width will be erected leaving sufficient space for a roadway 99 ft. wide, at the rear of same.

The general scheme contemplates improving the course of the Maribyrnong River between Napier Street and its present junction with the River Yarra; the widening of same to 300 ft. and deepening to 27 ft. It is intended to provide a Swinging Basin at the Napier Street Bridge to serve vessels engaged in the coal trade, the transfer of which would free berths at Victoria Dock and Williamstown for vessels carrying general cargo.

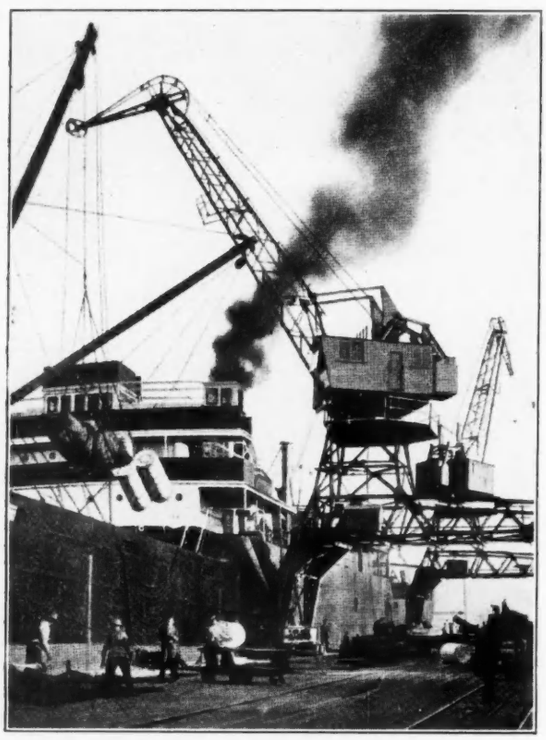
An area of approximately 83 acres has been reserved on the eastern side of the Maribyrnong River for the purpose of coal yards, and a commencement has been made in connection with the proposal by the demolition of sheet piling and the reclamation of the area required for railway tracks and storage bins.

The layout of one berth 400 ft. in length has been approved and plans and specifications have been prepared for a concrete structure and alternatively a concrete and timber structure.

Part 4: The Improvements at Williamstown and Port Melbourne and at the Entrance to the River Yarra.

WILLAMSTOWN.

At the entrance to the river, on the Williamstown side, it is proposed to provide dock and wharf accommodation to the extent of 14,360 ft., as may be required, for an increased export trade, and to provide all facilities for its cheap handling, with provision for handling grain in bulk.



Three-ton Electric Cranes, Victoria Dock.

PORT OF MELBOURNE.

Between Port Melbourne and the River Yarra three docks are proposed on the south of the main sewer which is laid between Port Melbourne and Spotswood. The scheme provides for these docks having a depth of 40 ft.

The construction of the first portion of the dock scheme at Port Melbourne will not be required for some years, as the Prince's and Station Piers will provide for expansion in the trade there, but the Commissioners offered, as soon as the land at Port Melbourne was made available, to spend £25,000 in establishing residences for port workers on a suitable site within the area set apart for road and railway purposes. Since then the State Savings Bank of Victoria purchased 44 acres, 3 roods, 27 perches of reclaimed land between Graham Street, the Williamstown Short Road, and the foreshore, from the Government of Victoria, and is erecting houses thereon and selling same to approved persons.

This area has been sub-divided into 318 allotments, and to date 92 pairs or 184 separate dwellings have been completed.

The Commissioners arranged with the Savings Bank for an alteration to the original layout of the housing scheme in order to provide an improved approach to future berths west of the Prince's Pier, to enable the beacons, denoting the centre line of the main channel, to be placed in more suitable positions, and also to afford direct road access from Port Melbourne to the South Wharf berths.

The number of vessels of deep draft and great length is steadily increasing, and though added accommodation is being provided in the river and docks for oversea trade, many of these large vessels must berth at Port Melbourne. It is only a question of time when the limit of the river accommodation will be reached, and the berths to be provided there will be as far distant from the centre of Melbourne as the present accommodation at Port Melbourne is. Although it may be some years before the whole of the Port Melbourne area will be required, the Government has been asked to vest the necessary land in tth Trust for port purposes.

Accommodation in the Bay.

Port Melbourne, formerly known as Sandridge, is situated on the north side of Hobson's Bay, three miles south-west of Melbourne, and is provided with three piers known as Prince's, Station and Town Piers.

Prince's Pier.

This pier was completed in 1914 and is 1,902 ft. in length, 186 ft. wide with a depth of 37 ft. at low water. It is capable of accommodating four of the largest and deepest draft vessels visiting the port.

The four berths are served by pipes connected with oil storage tanks for the purpose of supplying oil fuel to vessels requiring same.

Two steel shelter-sheds, each 280 ft. by 80 ft., providing office accommodation for the Customs Department and the Shipping Companies, as well as protection for passengers, have been erected. These sheds are built on a platform in the centre of the pier, and five moveable gangways from each shed lead from the platform to the vessels, bridging the railway lines and affording complete safety to the pedestrian traffic. Electric lifts are installed to convey passengers' luggage from the pier decks to these gangways.

On the pier is a central roadway 41 ft. in width, with a footpath on each side 19 ft. 6 ins. wide, and 6-ins. above the rail level, serving as a passenger platform. Four lines of rails are provided on each side of the structure. To give access to the pier, a roadway at rail level has been constructed parallel to the foreshore, the ultimate intention being to erect bridges across the railway lines at the Station and Prince's Piers, forming a through roadway connecting both piers with Beach Street.

It is proposed to compound this pier by the erection of a steel fence across its whole width, similar to that on the Station Pier, having steel entrance gates to allow ingress and egress of road and rail traffic.

The expenditure on this pier, superstructure, and approaches, is £222,983, and for dredging, £165,433, making a total of £388,416.

Station Pier.

This pier has been built on the site of the old Railway Pier, Port Melbourne, and its principal dimensions are:—Length 2,182 ft. and width 195 ft., as compared with the Prince's Pier, which is 1,902 ft. long and 186 ft. wide. The increased width was designed so that electrically-operated travelling portal jib cranes may be used on both sides of the pier. Two of these cranes, each capable of lifting three tons have been installed on the west side of the pier, and two similar cranes on the east side.

The main pier has four berths for overseas vessels, and the piles are of sufficient length to enable the berths to be dredged to 40 ft. below low water when necessary. At the shore end, wings with shelter sheds and refreshment rooms have been constructed for the Bay Excursion Steamers, and a landing stage for the use of motor boats and other small craft has also been provided.

Two double-decked shelter sheds each 300 ft. long by 127 ft. wide have been erected in which is accommodation for Customs Officers and shipping companies.

Moveable gangways giving direct access from the vessels' decks to the upper decks of the sheds have been installed. The gangways are hinged in order to suit the requirements of vessels of varying heights above the water line, and also to enable them to be raised clear of the travelling jib cranes.

The structure is similar to the Prince's Pier with a raised concourse in the middle while on either side there are four sets of railway lines.

At the entrance to the pier there is a two-storied building 78 ft. by 38 ft.; the ground floor is occupied by the Customs' Watching staff, and the top floor is reached by two stairways, one leading to the General Customs Offices and the other to accommodation for Harbour Trust officials.

The framework is part steel and part timber, being sheeted with timber. The gables, together with base of upper floor,

The Port of Melbourne, Australia—continued

are sheeted with " Fibrolite " shingles. The roof is covered with " Fibrolite " to correspond with the roof of the shelter sheds. Internally the building is panelled with " Fibrolite."

At this position, there are steel entrance gates forming part of a steel fence across the whole width of the pier, with the necessary entrances for vehicular and railway traffic. Inside the Compound, a building 100 ft. by 12 ft. 6 ins., has been erected, in which workmen may dine, and in which hot water facilities and other conveniences are available as required. This building is furnished according to the standard prevailing in all such erections throughout the port. A building of a like size has been constructed in a similar position on the opposite side of the space reserved for roadway, and is divided into offices for the purposes of the Railway Department.

An overhead footway bridge has been provided to give access to the east and west ferry wings, and also to the passenger platform at the several berths.

A fixed green light is exhibited from the front beacon, and a fixed red light from the back beacon, the illuminant being electricity. These lights in line lead through the channel on a bearing of about north half west.

The limits of the channel are defined by the St. Kilda Bank Beacon and four light buoys on the eastern side, and by three light buoys on the westernside.

Berthage at Williamstown.

Williamstown is situated on the south-west shore of Hobson's Bay, nine miles by rail from Melbourne.

Piers.

Breakwater Pier.—Extends north-east 1,506 ft. from the shore; total berthage space 713 ft. north-west side only; depth 31 ft. at low water; connected with the State railway system; mainly used for export wheat trade.

Victoria Dock, showing the improved entrance.

In order to make the pier complete in every respect, an overhead bridge should be built connecting Beach Road with the road leading to Prince's Pier, with a ramp leading down to the Station Pier. The estimated cost of this bridge is somewhere in the neighbourhood of £80,000, and of this amount the Trust is prepared to contribute £40,000. The Commissioners have endeavoured to get other departments interested in this desirable improvement to the approaches, and hope that the Government will consider it is a fitting work on which to engage a number of the present unemployed.

The sheds of, and the approaches to, the Prince's and Station Piers are lighted by electricity. The dredging at these piers has been completed to 37 ft., and, when necessary, may be continued to a depth of 40 ft.

The cost of the completed scheme is £636,164, including £92,752 for dredging, and £543,412 for construction of new pier, demolition of the old one, and erection of sheds.

Town Pier.

The outer end of this pier has been demolished and the pier now has 850 ft. of berthage with a depth of 28 ft at low water.

Channel.

The channel leading to the Prince's and Station Piers, Port Melbourne, is 600 ft. wide and was first dredged over the whole length and breadth to a depth of 34 ft. at low water. Next it was deepened to 37 ft. for a width of 300 ft. for practically its whole length, and dredging is now in progress to obtain a depth of 37 ft. over the whole channel.

The centre of the channel is defined by two beacons erected on the foreshore, the front beacon being a timber tower supported on a pile structure between Prince's Pier and the Station Pier, and the back beacon a concrete tower erected 1,657 ft. to the northward.

Plans are in hand to lengthen the structure to provide berthage accommodation of 939 ft. The specification stipulates the use of longer piles to permit of dredging to 40 ft. when required.

Gellibrand Pier.—Extends north by east 1,300 feet from the shore; total berthage space 2,109 ft.; depth 34 ft. at low water, connected with the railway system of Victoria; largely availed of for the export trade, principally wheat.

Nelson Pier.—Extends approximately north-east for 1,013 ft. from the shore; total berthage space 1,976 ft.; depth 34 ft. at low water; linked up with State railway system; almost entirely used for export trade, principally wheat.

Graving Dock Pier.—Extends about north-east 630 ft. from the shore; total berthage space 1,150 ft.; depth 28 ft. at low water.

Reid Street Pier.—Extends north-east 500 ft. from the shore; total berthage space 900 ft.; depth 20 ft. at low water.

Ann Street Pier.—Extends north-east 762 ft. from the shore; total berthage space 1,444-ft.; depth 18 ft. at low water. This pier is used exclusively by the Trust as a base for its floating plant.

Gem Pier.—Extends north-east 473 ft. from the shore; total berthage space 650 ft.; depth 12 ft. at low water. This pier was recently re-constructed at a cost of £7,113, and it serves small vessels transporting goods for use at Williamstown.

Ferguson Street Jetty.—Extends east and is 130 ft. in length; total berthage space 260 ft.; depth 12 ft. at low water. This jetty is connected to the foreshore at the foot of Ferguson Street by an approach 14 ft. wide consisting of 140 ft. of timber structure and 250 ft. of stone embankment. It was constructed for the purpose of the Williamstown-Port Melbourne ferry service and used as such for some years. This service has now been withdrawn and the pier is used by the public as a promenade and for the purposes of small pleasure boats.

The Port of Melbourne, Australia—continued

Channel.

The channel leading to the several piers at Williamstown is 600 ft. in width and is being deepened from 34 ft. at low water to 37 ft.

Entrance to River Yarra.

A channel, with 30 ft. at low water, has been dredged from the gas buoy moored about two cables E.N.E. from the outer end of the Gellibrand Pier, Williamstown, to the entrance of the River Yarra. This channel, which is 450 ft. wide at the gas buoy, converges to a width of 300 ft. at the entrance to river, and is being deepened to 32 ft. at low water.

Coode Canal.

This canal, which was named the Coode Canal after Sir John Coode, the English engineer who recommended its construction, was completed in 1886. It was cut across the flats below Fisherman's Bend and is 2,002 yards long; its effect was to reduce the distance from the river entrance to Queen's Bridge from seven miles to five and three-quarter miles, and also the navigation of the river was greatly facilitated.

The canal has been widened to 487 ft. and has been dredged to a depth of 32 ft. at low water, the width at low water level being 430 ft. The total cost of the canal is £121,818, exclusive of dredging.

Accommodation in River Yarra.

The distance from the mouth of the river to the Spencer Street Bridge, the termination of berthage accommodation, is 5½ miles. The width downstream from Spencer Street Bridge to the Interstate Swinging Basin is 300 ft. and 400 ft. from the Interstate Swinging Basin to the Victoria Dockhead.

There are 3⅛ miles of sheds on the river, and the Victoria Dock structures, 10,327 ft. being closed and 7,271 ft. open, having an area of 656,312 sq. ft. and 461,585 sq. ft. respectively. With a view of added protection for goods, most of the open sheds on the North Wharf and Victoria Dock have been fitted with patent roller shutters on both the water and road sides.

The various wharves in the River Yarra are as follows:—

North Wharf.

The North Wharf, comprising seventeen berths, has a berthage space of 7,089 ft. and carries 28 sheds—15 open and 13 closed—of varying widths of from 49 ft. to 72 ft., and having a total length of 5,660 ft. giving an area of 305,673 sq. ft. This wharf is used mainly by vessels engaged in the Interstate trade and the depth of water at the several berths at low water is 27 ft.

The wharf was constructed prior to the advent of motor lorries, and was of a strength sufficient only for horse-drawn vehicles, with a maximum wheel load of 1½ tons. As the decking and beams have become due for replacement, through wear and decay, the superstructures of the portions of the wharves between the wharf face and the cargo sheds have been strengthened by the renewal of the timbers, and the spacing of the beams closer together, so as to increase the allowable wheel load to 3.8 tons which corresponds to the wheel load of a motor lorry of 9.7 tons gross.

Generally, the supporting power of the piles limited the carrying capacity of the wharf to this standard, but, where owing to the bad state of the piles and the superstructure, an opportunity was afforded of providing for heavier loads, longer piles were driven and a stronger superstructure of reinforced concrete adopted, so as to increase the loading capacity to a 6.75 ton wheat load, which corresponds to a motor lorry of 20 tons gross. Of the total length of 7,089 ft., 2,640 ft. will now accommodate a 3.8 ton wheel load, and 525 ft. a 6.75 ton wheel load. In addition, 300 ft. of No. 8 Berth, has an entire renewal of its superstructure to accommodate the hydraulic cranes of the Metropolitan Gas Company and 440 ft. comprising No. 9, and part of No. 8 Berths, has now been replaced by an entirely new structure. The wharf piles consist of ironbark and turpentine timber, and range in length from 60 ft. to 97 ft. The wharf will support a 25-ft. gauge track along which the coal unloaders will travel. The dredged depth at the berth is 26 ft. at low water spring tide.

A new wharf, which closed Spencer Dock to shipping, comprising a reinforced deck 82 ft. long by 29 ft. wide, on new timber piles, has been erected at No. 1 North, and the adjoining wharves, Nos. 2 and 3, re-aligned by the reconstruction of approximately 270 ft. of wharfage 16 ft. wide and 110 ft. by 30 ft. wide, in reinforced concrete on timber piles. The cost of the completed work is £14,906.

South Wharf.

The South Wharf has 10,836 ft. of berthage upon which 11 sheds—9 closed and 2 open—have been erected. These sheds have a total length of 1,615 ft. and vary in width from 30 ft. to 50 ft. giving an area of 75,289 sq. ft. The upper section of the wharf, approximately 840 ft. in length, is used by small vessels engaged in the State and Interstate trade. The balance is used by Oversea and Interstate vessels mainly employed in conveying coal and timber imports. The depth at low water at all the berths is 27 ft.

It has been decided to erect three additional sheds on the south side of the river—one at No. 11 berth 312 ft. in length by 50 ft. wide, one 1,000 ft. long by 100 ft. in width at Nos. 12 and 13 berths, and one 575 ft. long by 100-ft. wide at No. 14 berth. It is proposed to allocate the latter shed to vessels engaged in the steel trade.

The Victoria Dock.

This dock, which is located four miles from the entrance to the river, was opened in the year 1892. It had a water area of 96 acres, but this has been reduced to 90 acres by the construction of the Central Pier, and by the widening of the wharves on both sides. It has a depth of 30 ft. at low water, and provides a berthage space of 10,313 ft., with 18 open and 20 closed sheds, of widths varying from 60 ft. to 80 ft., thereon, giving a total area of 738,935 sq. ft.

In 1915 a central pier was constructed in the dock having a length of 1,630 ft., a width of 2505 ft., and a roadway up the centre of 57 ft. wide.

The construction of the pier is in timber, and the roadway was formed by laying wood blocks on reinforced concrete plates, supported on turpentine piles.

The pier provides six berths, fitted with six up-to-date sheds, each 486 ft. in length by 60 ft. in width—300 ft. of closed shed, with 93 ft. of open shed at each end—suitable for the oversea trade.

The cost of the whole structure was £200,458.

The Victoria Dock entrance has recently been widened and its narrowest point which was 160 ft. wide is now 180 ft.

The original entrance made an angle of about 135 degs. necessary to the course of a vessel prior to entering the dock. In the new entrance, the angle is made about 150 degs., and a vessel entering has to alter her course about 30 degs., as against 45 degs. previously. The converging entrance also gives greater latitude in steering through. The narrowest part is now 180 ft. wide; formerly it was 160 ft. The widened entrance was dredged over its entire width to the required depth.

The work of widening the berths in the Victoria Dock was completed in 1925 at a cost of £126,198.

Work under this contract comprised the construction of a new wharf approximately 66 ft. wide, and 2,000 ft. long, the outer 46 ft. of which is of similar construction to the heavy section constructed at the entrance to the dock; the inner 20 ft., together with the old 40-ft. wharf which has been re-constructed, is decked with an 11-in. reinforced concrete slab resting on 12-in. by 6-in. walings fixed to the piles.

These slabs, with a 20-ft. strip at the rear of the existing wharf, form the floor of the new 80-ft. sheds at Nos. 19, 20 and 21.

The 20-ft. strip referred to was formed by building a small retaining wall 20 ft. to the rear of the wharf, and after filling the space over the existing road between this wall and the wharf with ashes, a 4-in. reinforced concrete slab was laid thereon.

Sheet piling was not considered necessary at the rear of the wharf, as the timber sheeting previously placed in position is more than 100 ft. from the new wharf face, and well away from any dredging operations, but it was strengthened by having a concrete wall cast against it down to low water.

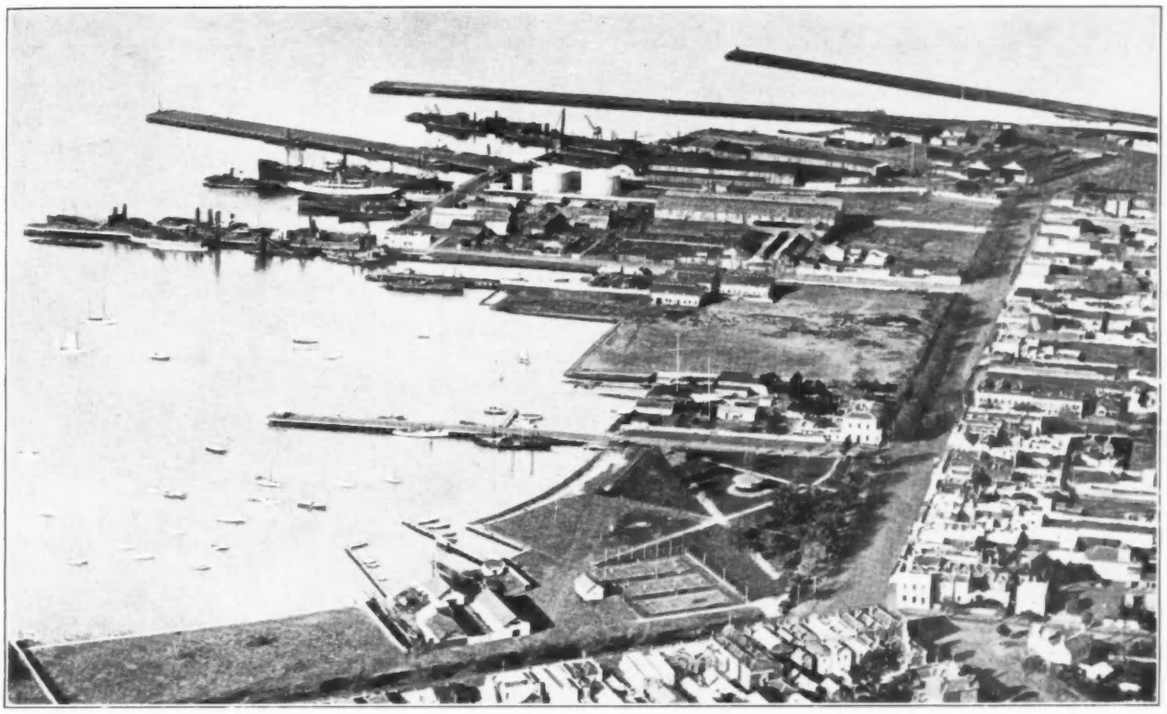
The new sheds erected on the reconstructed wharf are 80 ft. in width, and consist of one continuous structure 1,260 ft. long divided by internal partitions into three sheds. Steel roller shutters are provided throughout so that the whole may be locked up. The expenditure on these sheds was £39,003, excluding shutters, which cost £9,027.

The sheds have reinforced concrete floors, capable of carrying a load of 6 cwts. per sq. ft., and are 3 ft. 9 in. above the roadway at the rear of the shed to facilitate the loading of waggons. Hatchways have been provided in the roof of the structure, within the radius of the cranes, so that the loading and unloading of cargo, to and from vessels, may be more conveniently accomplished.

Various ramps at grades of 1 in 25 give access from the roadway to the wharf, all of which have been designed to carry 5-ton motor trucks (or a total load including the vehicle of 9.7 tons).

At a census of vehicles from Victoria Dock taken in March, 1924, it was found that the motor truck type of conveyance had increased considerably and gave every reason to assume that it would become, within the next few years, the main method of transport from the more distant wharves to city warehouses.

Port of Melbourne, Australia



Williamstown Piers.

Electric Platform Tructor in operation at Victoria Dock.

The Port of Melbourne, Australia—continued

With the completion of the sheds referred to, a storage space of 186,832 sq. ft. has been provided on this side of the Victoria Dock.

To enable the berths on the south and east side of the Victoria Dock to be dredged to a depth of 32 ft. it is necessary to widen the wharf in front of the several sheds from 24 ft. to 34 ft., and No. 1 Berth, Victoria Dock, has been so widened at a cost of £10,893. In conjunction with the widening, the reconstruction of the superstructure in front of the shed was carried out. The new construction will provide a reinforced concrete deck surface of sufficient strength to carry heavy motor lorries and the surface should prove much better for the handling of cargo than the existing timber deck.

Practically all the Oversea shipping, with the exception of the Mail Steamers and the White Star Line, is accommodated in either the River or the Victoria Dock.

Footscray Wharf.

The wharf at Footscray, below the Napier Street Bridge has a berthage space of 860 ft., a depth of 16 ft. and is used principally by importing vessels conveying materials for factories which are established in the vicinity and also for the landing of cattle.

Yarraville Wharf.

There is a berthage space of 2,177 ft. at Yarraville, with a depth at low water of 26 ft. This wharf is used by the several companies having works in the locality; one berth is linked up with the State railway system as well as with pipe lines, and is set apart for the discharge of oil in bulk, in case, or in barrel.

Newport Wharf.

The decision to provide accommodation in the River Yarra at Newport, for vesels carrying oil in bulk, necessitated the widening of the river by 60 ft. for a distance of 2,000 ft., so that there would be no interference with the navigable width of the channel.

The first berth to be constructed is known as No. 3 Newport, and was entered upon under agreement with the British Imperial Oil Co., now the Shell Co., of Australia, who paid half the total cost of providing the accommodation required.

This erection consisted of a wharf 400 ft. in length by 21 ft. in width; sheet piling 700 ft. in length; setting back sheet piling on opposite side of the river. The total cost of the work was £37,513, including dredging, railway connections to the wharf, and the supply of electric light and water supply services.

The construction of a further 400 ft. of wharfage at the southern end of No. 3 Newport, was carried out under an agreement with the Commonwealth Oil Refineries, Ltd., by which the cost including necessary dredging, construction of sheet piling on both sides of the river, and railway extension from No. 3 berth, was borne in equal shares by the Company and the Trust. This wharf is known as Newport No. 4, and its cost, exclusive of the railway siding, was £21,937.

The construction of a timber wharf at Yarraville, 450 ft. long by 21 ft. wide, was carried out under similar arrangements with the Vacuum Oil Company. At the rear of the wharf provision is made for shallow barges to berth, and thus be protected from wave action. The structure includes two timber approaches, each 21 ft. wide by 31 ft. long, and also necessitated the demolition of 820 lin. ft. of old sheet piling and the construction of new sheet piling of equal length in its place. The cost of this work, including dredging (£6,024) was £22,266.

Large Vessels entering the River.

An indication of the nature of the accommodation provided in the River and the Victoria Dock is to be found in the fact that vessels up to 15,000 tons gross register and 570 ft. in length have berthed therein. During the year 1932 a number of large and heavy draft vessels have come up to these wharves, such as the following:—

1932	Tons Gross	Length ft.	Draft ft.	Draft in.
"Hobson's Bay"	14,198	531	24	6
"Nestor"	14,629	563	22	7
"Jervis Bay"	14,164	531	24	0
"Baradine"	13,072	520	24	2
"Esperance Bay"	14,176	531	25	2
"Largs Bay"	14,184	531	25	5
"Barrabool"	13,062	520	24	0
"Moreton Bay"	14,145	531	23	0
"Ulysses"	14,652	514	22	6
"Euripides"	14,947	551	23	0
"Ballarat"	12,996	520	25	3
"Balranald"	12,991	520	25	1

The largest Interstate steamers that regularly berth at the River wharves are:—

	Tons Gross	Length ft.	Breadth ft.
"Katoomba"	9,424	450	60
"Manunda"	9,115	430	60
"Westralia"	8,108	431	60
"Karoola"	7,391	420	56

The largest vessel to berth in the port was the s.s. "Strathnaver," gross tonnage 22,547 tons, and that with the deepest draft on entering or leaving was the s.s. "Euripides," 32 ft. 7 in., in the Bay, and the s.s. "Bendigo," 27 ft. 7 in., in the River.

A comparison of the traffic at the River Wharves with that at the Bay Piers during the year 1933:—

	Imports	Exports	Gross Tonnage
River and Victoria Dock, Melbourne, Yarraville and Footscray	2,531,953	1,130,431	8,303,724
Bay Piers, Port Melbourne and Williamstown ...	106,571	585,245	3,557,593
Total	2,638,524	1,715,676	11,861,317
Percentage in River	95.96	65.88	70.01
,, Port Melbourne	3.21	16.27	25.97
,, Williamstown	.83	17.85	4.02
	100	100	100

Allowance must be made for the fact that the tonnage of all large Mail Steamers and the White Star Line is included in the total at Port Melbourne, both on their outward and homeward trips, most of these vessels passing on to Sydney.

Return showing Proportion of Traffic, etc., in the River and Bay.

RIVER WHARVES.

	Imports	Exports	Gross Tonnage
1878	589,943	208,898	1,070,152
1888	1,287,568	390,804	2,508,908
1898	1,395,790	503,482	3,354,232
1908	2,287,770	645,873	5,650,351
1912	2,630,036	816,024	6,876,534
1918	2,364,729	891,992	4,216,944
1923	3,056,383	874,855	8,324,409
1926	3,009,834	919,028	7,697,971
1927	3,379,965	914,781	8,443,812
1928	2,983,478	900,564	8,005,816
1929	3,021,711	1,024,168	8,333,155
1930	2,478,781	912,712	7,703,673
1931	1,811,802	903,680	7,136,536
1932	2,285,777	1,045,188	7,662,716
1933	2,531,953	1,130,431	8,303,724

BAY PIERS.

	Imports	Exports	Gross Tonnage
1878	421,736	127,970	815,816
1888	648,503	144,254	1,744,445
1898	212,901	135,454	1,642,221
1908	252,038	251,904	2,442,731
1912	326,624	448,428	3,353,607
1918	177,990	281,082	1,054,236
1923	325,940	379,212	3,491,146
1926	567,994	494,685	4,204,543
1927	472,308	552,637	3,985,078
1928	416,223	430,485	3,707,524
1929	326,884	491,528	3,593,895
1930	158,757	344,039	3,556,724
1931	84,419	522,605	3,126,015
1932	90,451	513,793	3,355,492
1933	106,571	585,245	3,557,593

PERCENTAGE AT RIVER WHARVES.

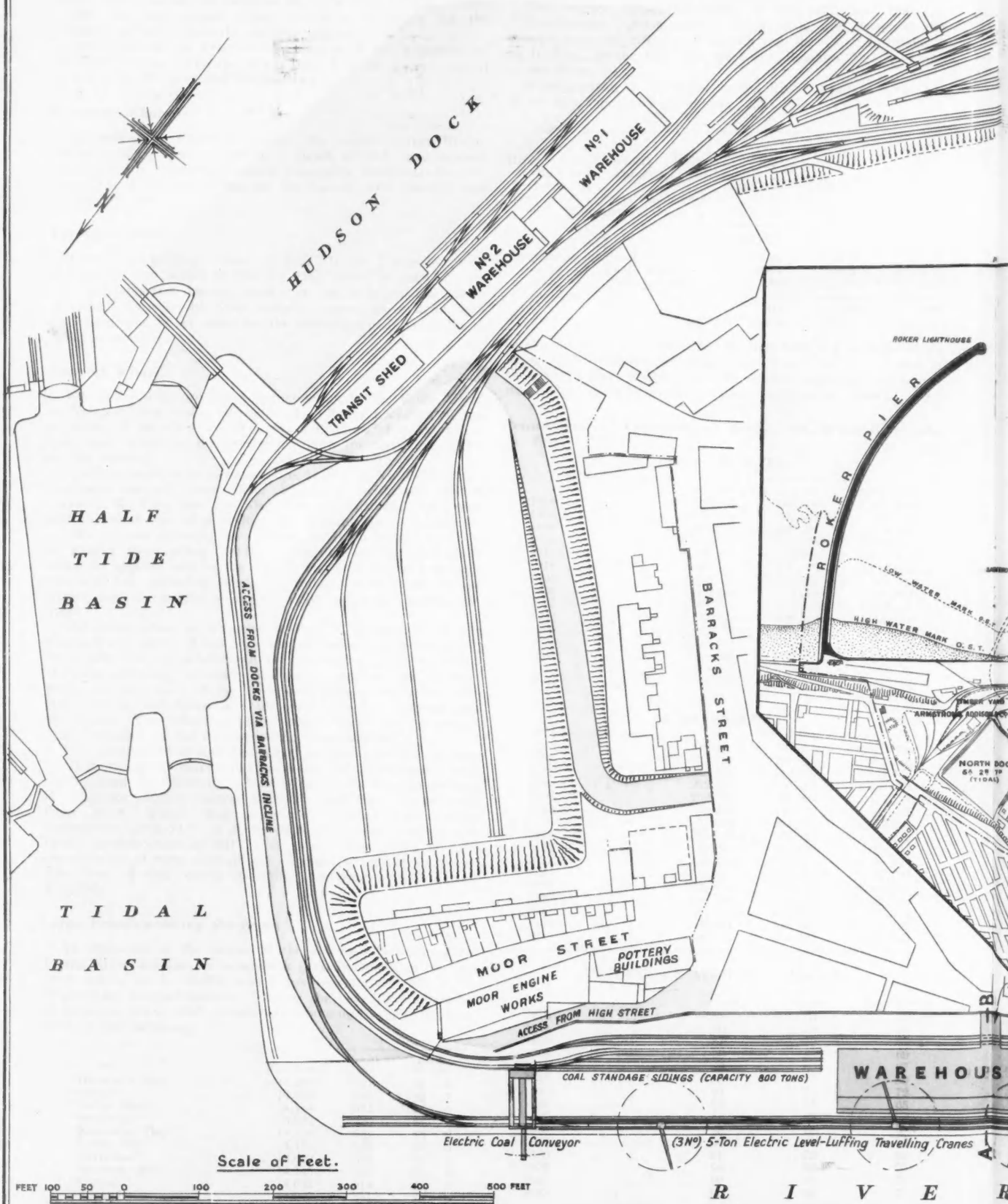
	Imports	Exports	Gross Tonnage
1878	58	62	57
1888	66	73	59
1898	87	79	67
1908	90	72	69
1912	89	65	67
1918	93	76	80
1923	91	73	72
1926	84	65	65
1927	88	63	68
1928	88	68	68
1929	90	68	70
1930	94	73	69
1931	96	63	70
1932	96	67	70
1933	96	66	70

(To be continued)

SUNDERLAND HARBOUR & DOCKS

CORPORATION QUAY.

UNDER THE JURISDICTION OF THE RIVER WEAR COMMISSIONERS.



WARD & FOXLOW, LITHO HARBURY ST.

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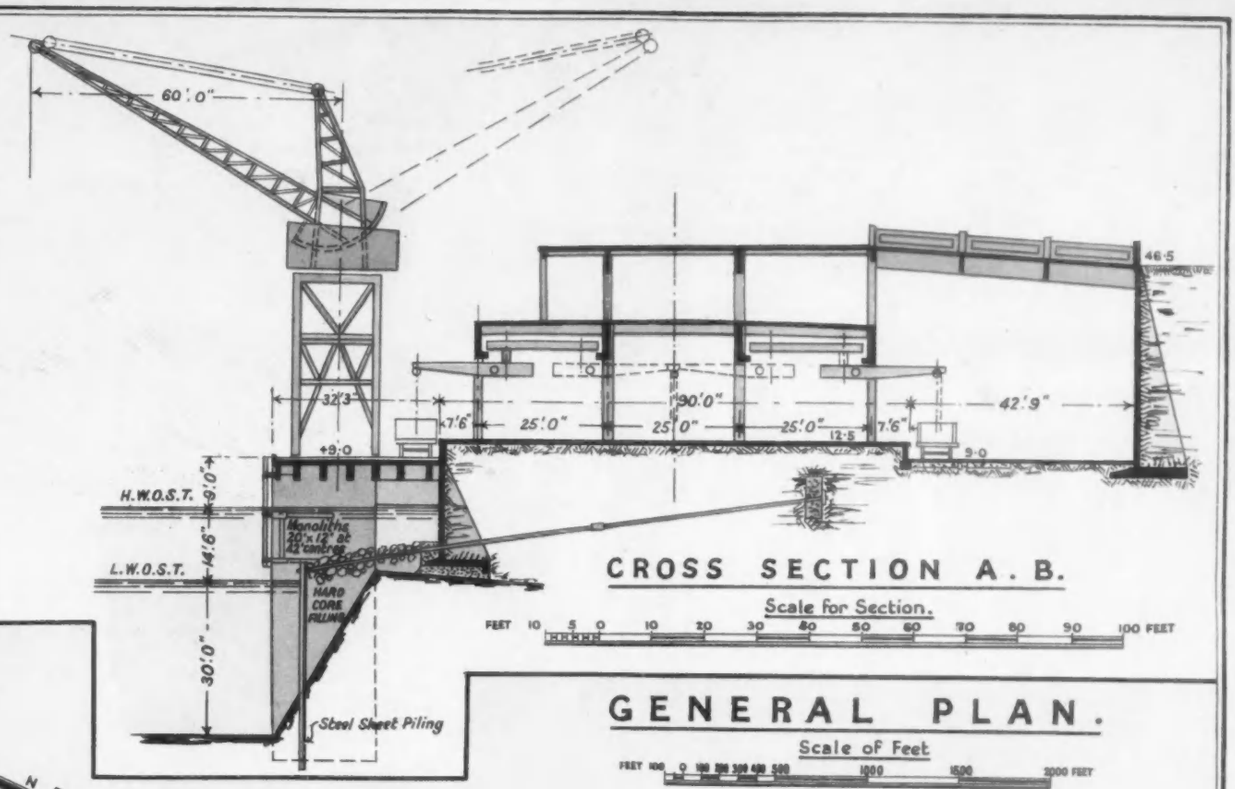


CROSS SECTION A. B.

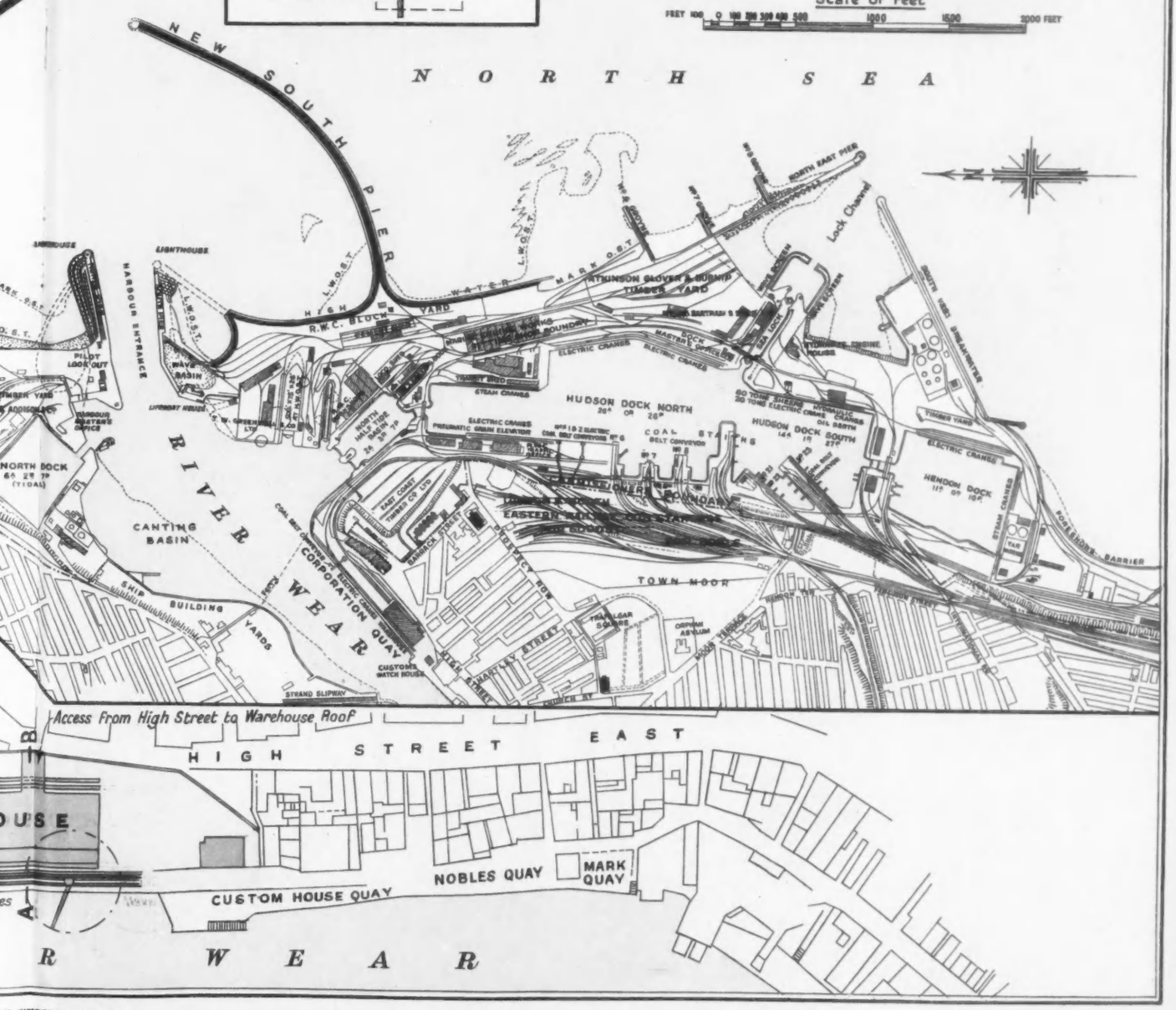
Scale for Section.

FEET 10 5 0 10 20 30 40 50 60 70 80 90 100 FEET

GENERAL PLAN.

Scale of Feet

FEET 100 0 100 200 300 400 500 1000 1500 2000 FEET



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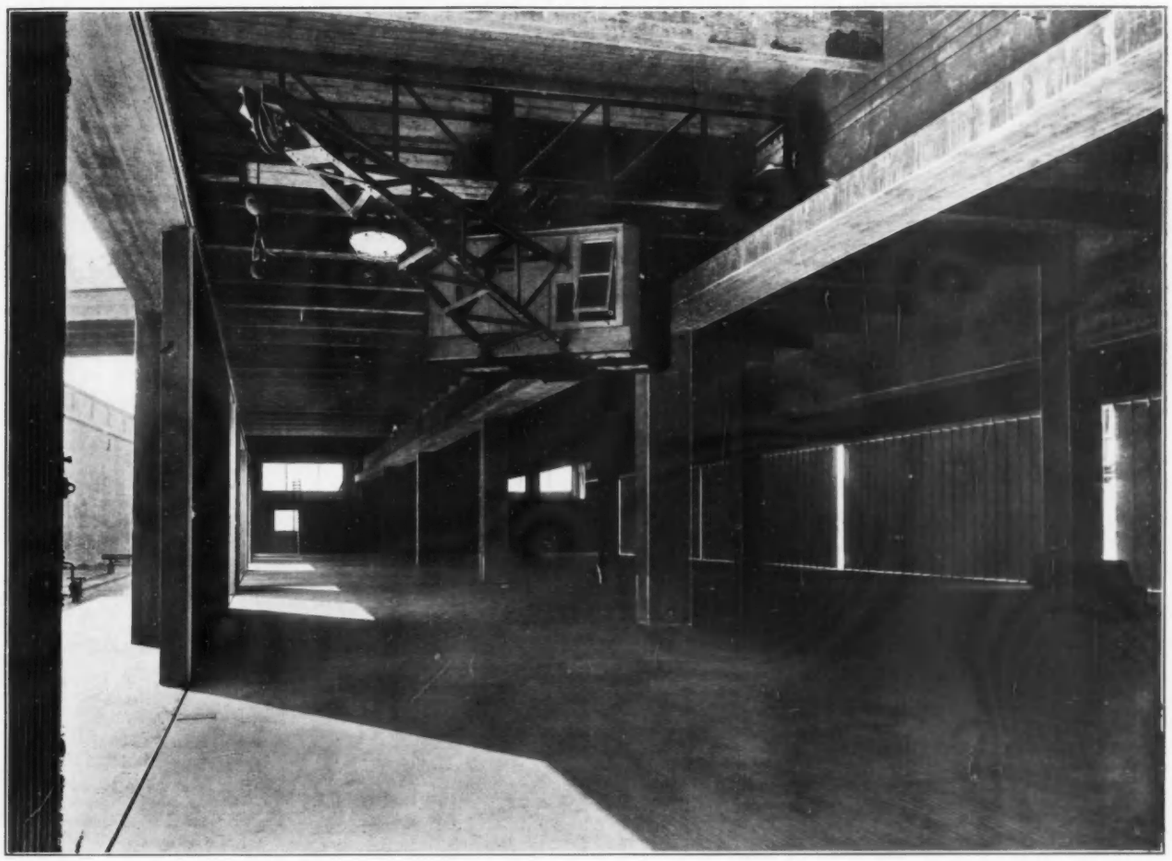
New Corporation Quay at Sunderland

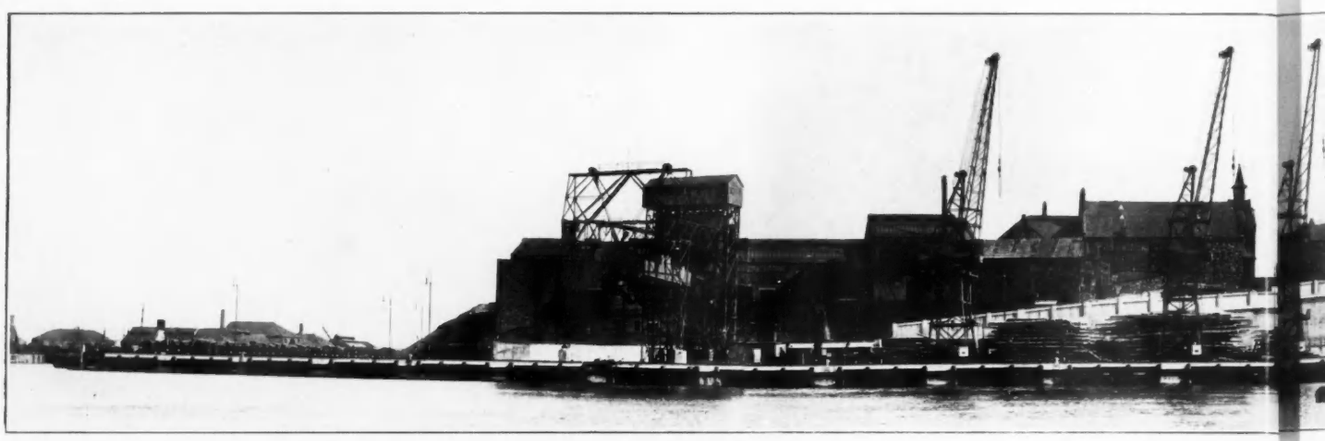


Ground Floor of Warehouse with Underhung Crane.

Warehouse and Quay from West End.

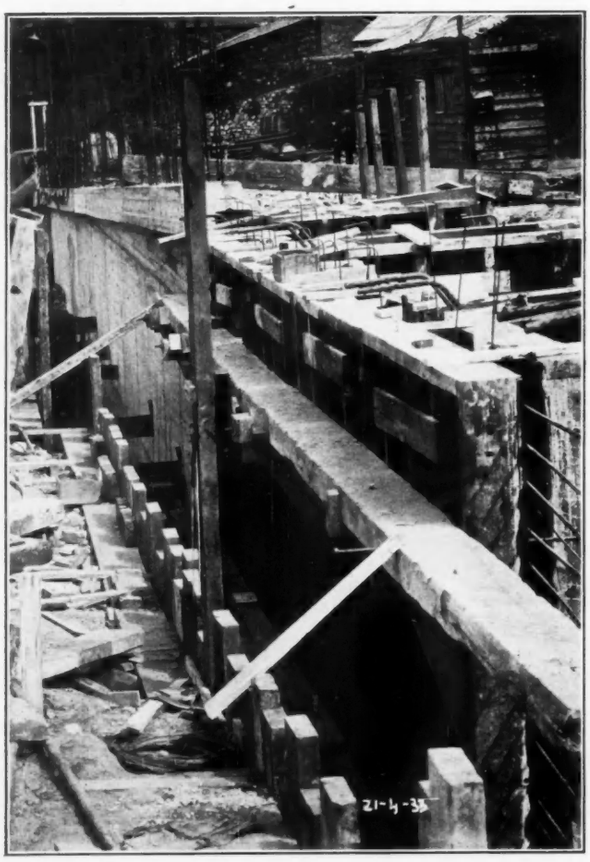
New Corporation y

Official Opening of New Quay

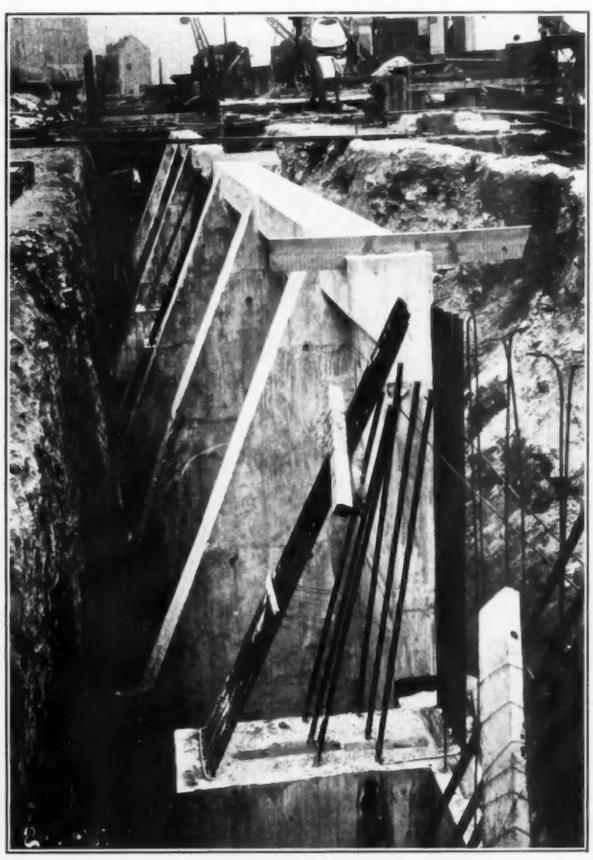


Panoramic View Corpo

SUNDERLAND Corporation Quay, which has taken nearly four years to construct, was opened on October 10th last, by Sir John Priestman, Bart. It is particularly conveniently situated, as will be seen from the Supplement, being only half-a-mile from the open sea, yet perfectly protected from sea effects. The Quay was undertaken because of the need of provision in the port for the rapid loading or discharging of cargo without that delay which is more or less incidental to the use of docks which are affected by tides. The construction of the Quay was authorised under the provisions of the Sunderland Corporation Act, 1927, and the work of construction was commenced in 1930. The Quay has a length of 1,062 ft., and a depth of water of 30 ft. at low water Ord. Spring tides. This will give a depth of 44 ft. 6 ins. at H.W.O.S.T. The Quay covers an area of six acres. At the west end of the Quay there is a two-storey reinforced concrete warehouse and transit shed, 300 ft. in length, by 75 ft. in width, with loading platforms 3 ft. 6 in. in height, and railway lines back and front. A bridge for heavy vehicular traffic, up to 10-ton lorries is provided leading from the second storey of the warehouse to High Street East. The ground floor is equipped with two under-hung travelling and transversing electric cranes, each of one ton capacity. The Quay is equipped with three electric level luffing cranes each of five tons capacity. These cranes can deliver goods from and to either floor of the transit shed and warehouse, or directly between ship and road vehicles on the second storey of the building. The vehicles can then leave by the bridge leading direct to High Street East at the high level, thus saving a considerable length of journey and descent to Quay level. In addition to the Quay cranes, steam-travelling cranes are available as required to assist in unloading cargoes or transferring goods to road or rail. An electric coal conveyor to deliver coal aboard ships at the rate of 600 tons per hour, with gravitation standage sidings for 800 tons, is situated near the seaward end of the Quay. This appliance can deal with the largest vessels capable



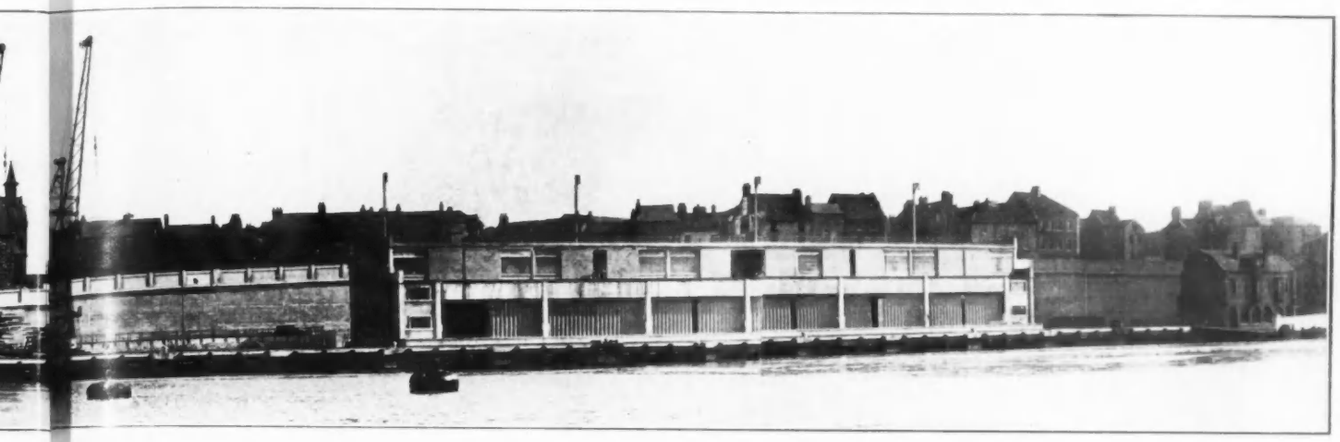
Back Reinforced Concrete Wall. Finished Sections "E" and "F."



Reinforced Concrete Retaining Wall.

...ony at Sunderland

Completion of £350,000 Scheme



View Corporation Quay.

of using the port. Special attention to the prevention of breakage has been given in designing the coaling appliance, and it is believed to be second to none in this respect.

The coal is brought to the plant in wagons varying in capacity up to 20 tons, these wagons being hoisted and their contents tipped into an elevated receiving hopper by means of a Mitchell patent wagon tippler hoist. This hoist has a capacity of 30 wagons per hour, and is operated by a 100 h.p. motor.

From the receiving hopper the coal is fed by means of two apron plate feeders on to the loading-out conveyor. This loading-out conveyor is of the troughed rubber and canvas belt type, 48 in. wide, and operates at a speed of 250 f.p.m.

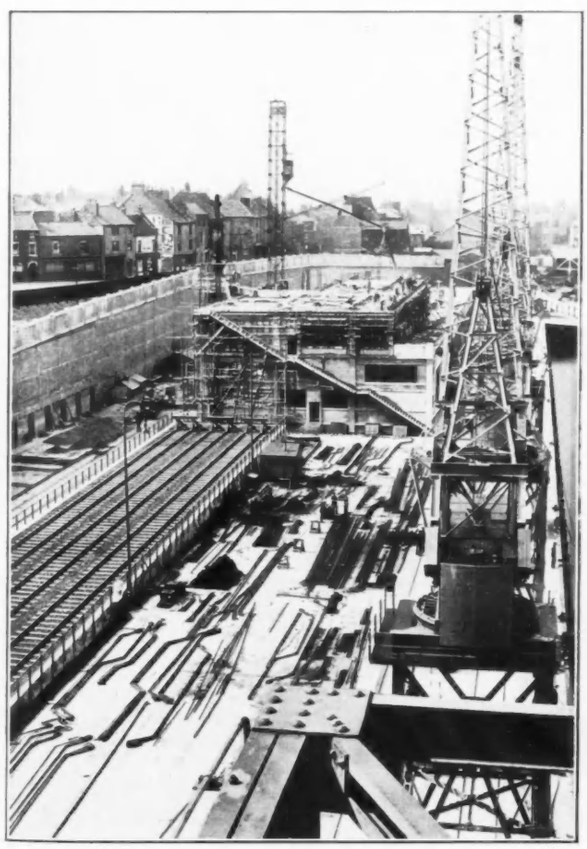
The idlers are of the Mitchell patent ball bearing type specially designed for heavy and arduous duty.

The conveyor is arranged to have a telescopic motion of 42 ft. 6 in. and is suspended from a portal structure on the edge of the quay, in such a manner that it can be raised and lowered and slued in order to command a large range. It is driven by a 30 h.p. motor, the telescoping winch being mounted on the conveyor structure and being driven by a 10 h.p. motor. The luffing and slueing of the conveyor is carried out by means of winches arranged in the same house as the tippler hoisting winch.

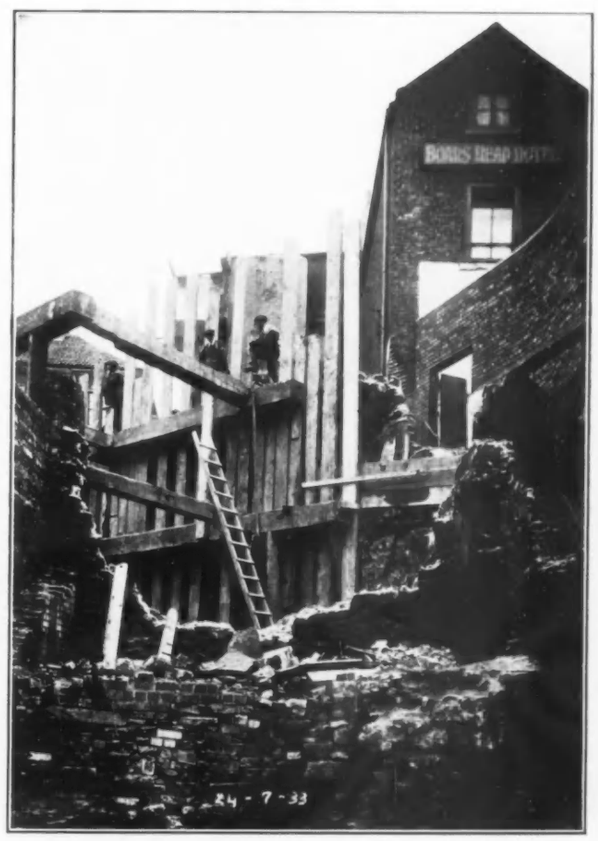
The luffing winch consists of two rope drums driven by a 33 h.p. motor. A differential gear is incorporated in the winch mechanism and coupled to a 6½ h.p. slueing motor in such a manner that one drum can be rotated at a higher speed or can rotate in an opposite direction. By this means the boom conveyor can be slued from one side to the other.

At the end of the belt conveyor a chute is provided through which the coal is delivered into the hatches of the vessels. This chute is of the power operated rotating type, the end of the chute also being arranged for luffing, further to increase the range and facilitate trimming.

All operations of the plant with the exception of the wagon tippler hoist are controlled from an operator's cabin arranged

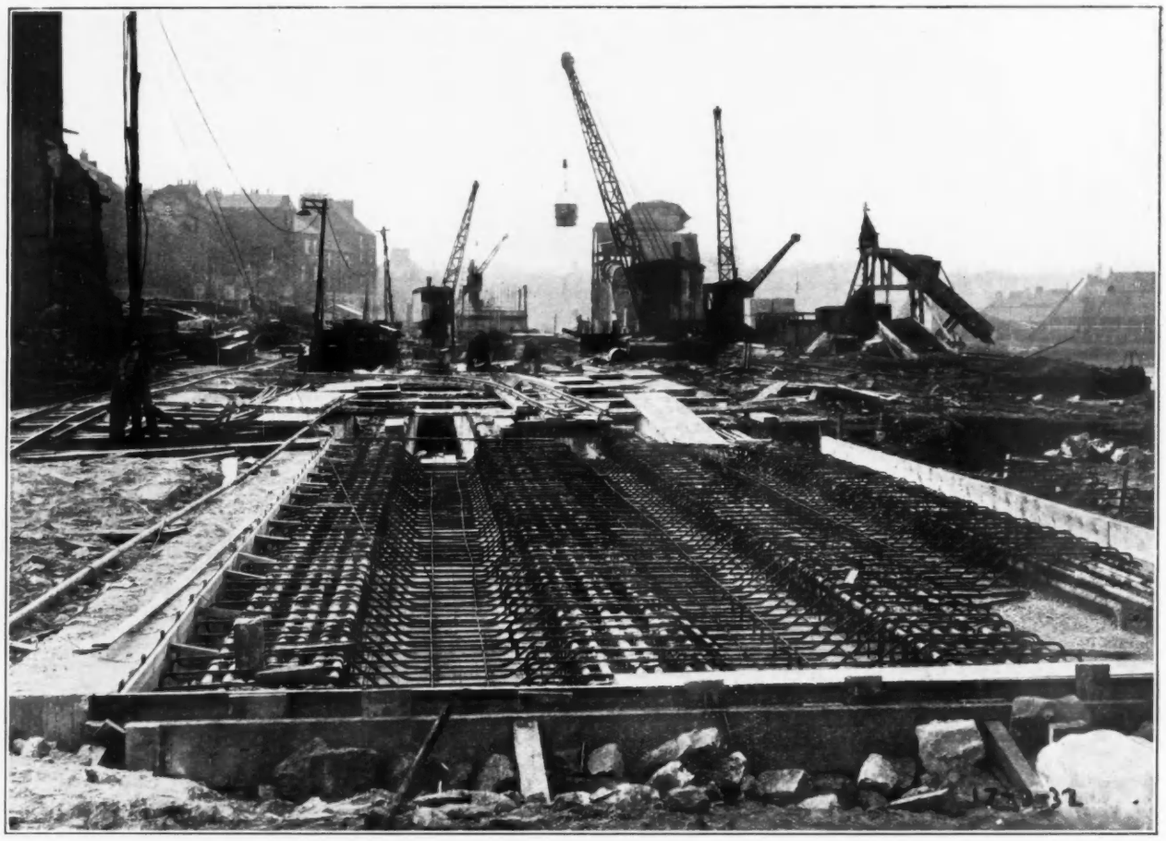


View from Top of Coal Conveyor.

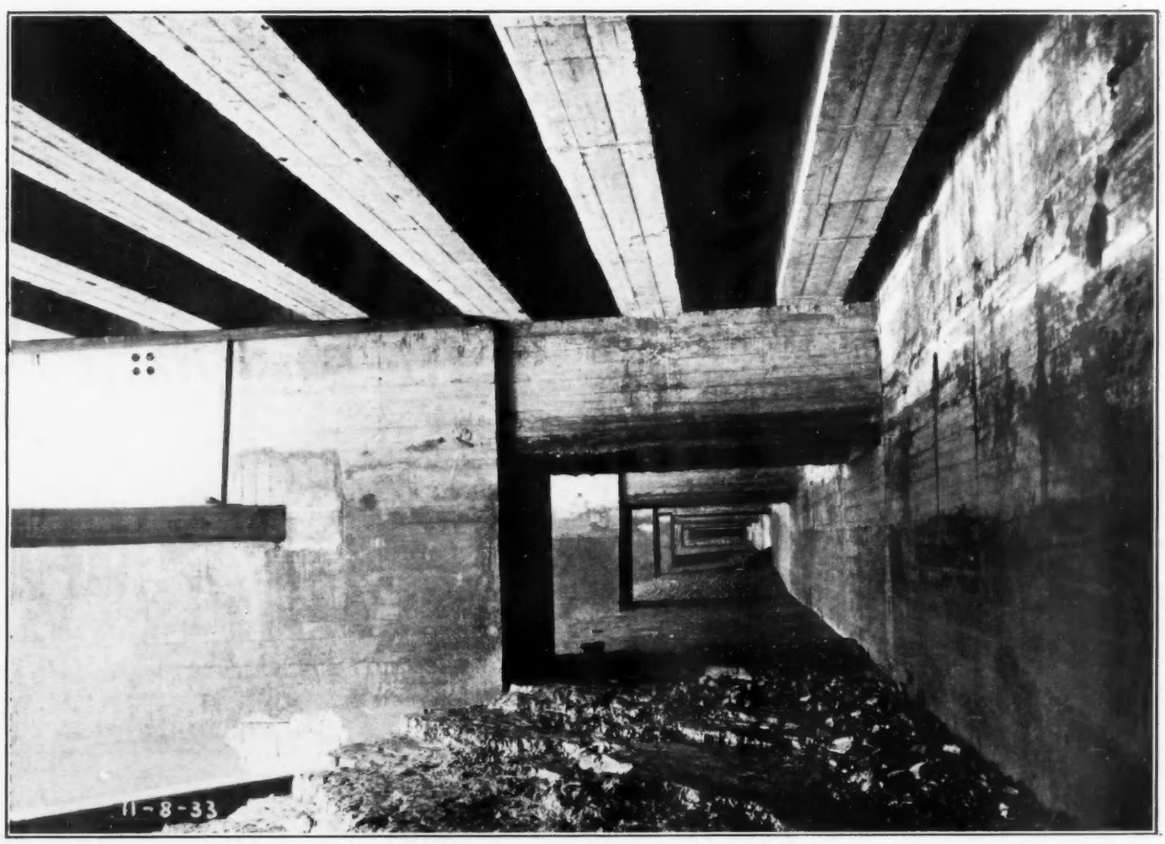


Trench for Back Wall.

New Corporation Quay at Sunderland



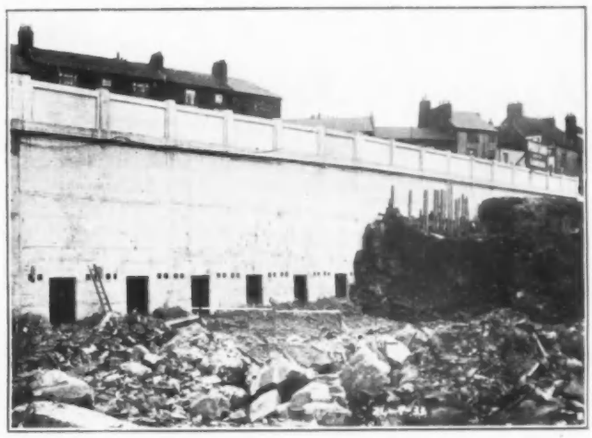
General View looking West, showing Reinforcement for Slab over Deck Beams between Monoliths 1 and 2.



Under Quay at Monolith No. 10, looking East.

New Corporation Quay at Sunderland—continued

First Floor of Warehouse.



Sub-station Section of Back Wall.

on the front leg of the structure. Push button controls are provided for all motions and limit switches have been incorporated in order to prevent any over-winding of the winches.

Arrangements for supplying oil bunkers to vessels requiring them are being made, and these it is expected will be available early next year. There is rail connection to the River Wear Commissioners' lines at the east end of the Quay, and thence to the London and North-Eastern Railway. In the carrying out of the works the Corporation have had the ready assistance and co-operation of the River Wear Commissioners, whose Engineer, Mr. W. H. S. Tripp, M. Inst. C.E., M.I. Mech. E., was appointed engineer for the scheme, and has been responsible for the preparation of the plans and the supervision of the works. The total cost of the scheme will be about £350,000.

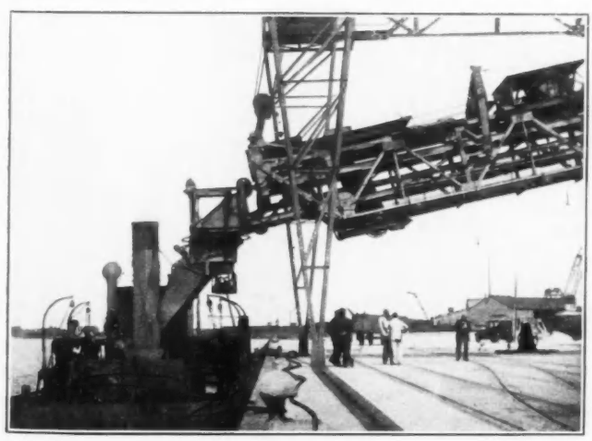
Details of Construction.

When the work began the site of the Quay was covered by old house property. The first problem that the engineer had to consider was how to make a quick start as was necessitated by the terms of the unemployment grant made towards the scheme, and it was decided that if the Quay could be built on large concrete pillars or monoliths these could be sunk without danger to the houses, and, therefore, the foundations, which are usually the most laborious and difficult part of such work, could be proceeded with while arrangements were being made for the re-housing of the tenants. Twenty-six of these monoliths each weighing 80 to 90 tons were constructed and sunk along the Quay front, being linked together with reinforced concrete bracings, making a solid front. At the back of the monoliths a reinforced concrete retaining wall was built to relieve the monoliths from the ground pressure. The Quay deck is formed of reinforced concrete beams which run from monolith to monolith. In sinking the monoliths the contractors first tried open excavation, and actually sank two shafts 50 ft. below the high-water mark in order to try to build them up in solid form from the bottom and so avoid the use of compressed air. It was found, however, that the amount of pumping that had to be undertaken with this method was so great as to make the cost prohibitive. Another method which was then tried was the making of an open concrete cylinder to form a sort of lining to the hole as it was excavated, and to sink this cylinder by open excavation and building up as necessary from time to time. This also was found to be too costly, and finally the compressed air method was used.

There are twenty-six monoliths with a cross section of 20 ft. by 10 ft. Each was sunk to a depth of 70 ft. below high water mark, giving them a total height of 60 ft. In sinking the monoliths by compressed air one-third of the monolith was built in the position it was intended it should be sunk. Inside the monolith, near the bottom, was a small chamber in which men could work. This chamber was connected with the top by a tube about 3 ft. in diameter which contained a ladder for the men to go up and down. On the top was built a steel air-lock with a small entrance compartment. The compressed air was pumped into the air-lock for forcing the water out under the bottom of the monolith. The workmen entered the small chamber two or three at a time, and when the outer door had been shut the compressed air was gradually pumped into the chamber until the air was of the same pressure as the air inside the bottom chamber after which the inner door could be opened, the workmen could descend the ladder to work at the bottom of the monolith. The highest pressure used was about 30 lbs. to the sq. inch. The excavation work at the bottom was done by men loading a small bucket, which was pulled up by a crane wire passing through a small hole in the top of the air-lock. The crane pulled the bucket into a small entrance chamber specially shaped to received it, after which the inner door of the chamber was closed, and the compressed air let out. The outer door was opened, the bucket was removed, and an empty bucket inserted and let down.

The monoliths were sunk mostly through foundations of marl, but in many places near the surface as well as much deeper down layers of very hard rock were met with. In every case the monoliths are founded upon hard rock. The monoliths sunk by their own weight as the ground was excavated underneath them, but occasionally they would become fast and pressure was then required to sink them.

The building of the retaining wall to hold up High Street was almost an equally big undertaking. It was thought at first that this would be one of the most difficult parts of the work, but it was found that the ground behind this wall was of such a very hard nature that it stood up so well that houses only a very short distance behind were hardly affected. In one sense, the high level of High Street above the Quay site

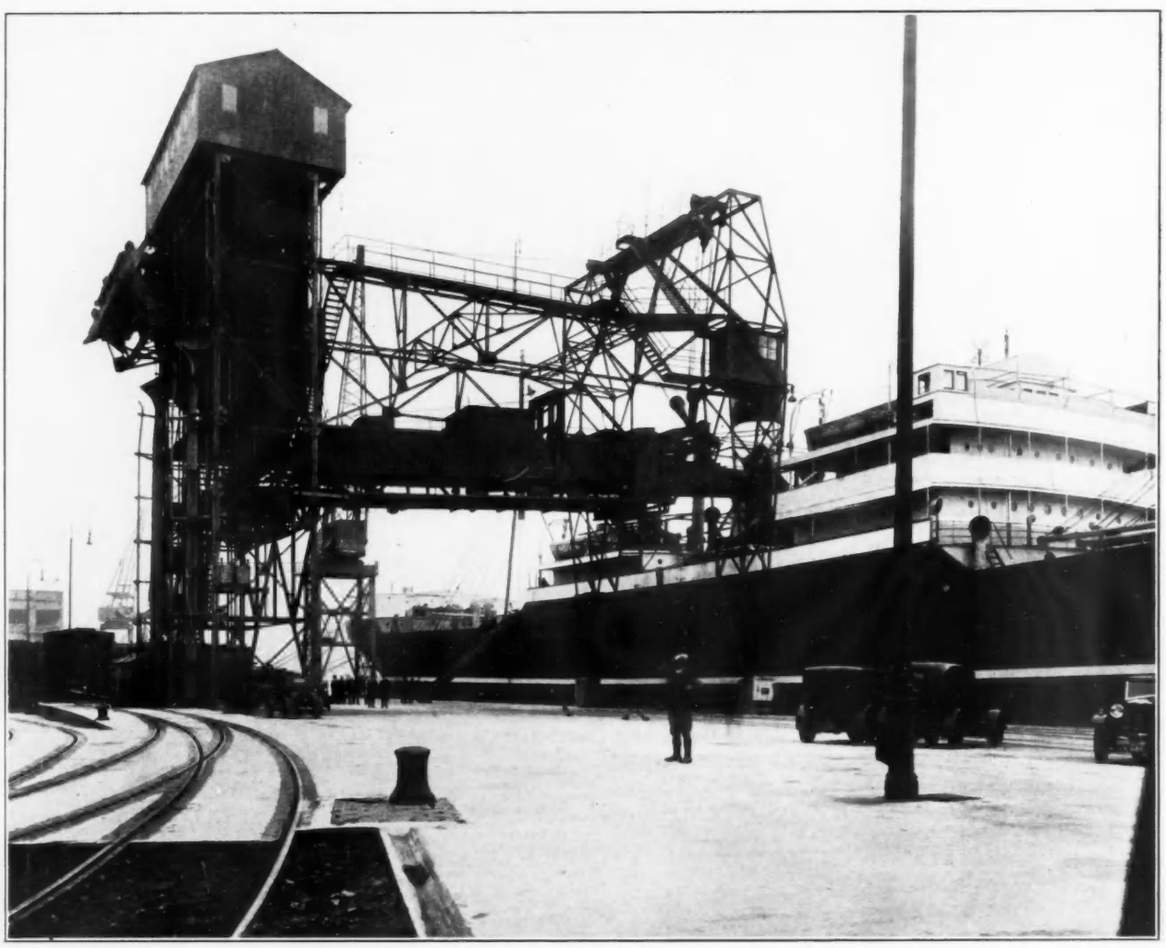


First Coaling at New Quay.

Steel in Conveyor Pit.

New Corporation Quay at Sunderland

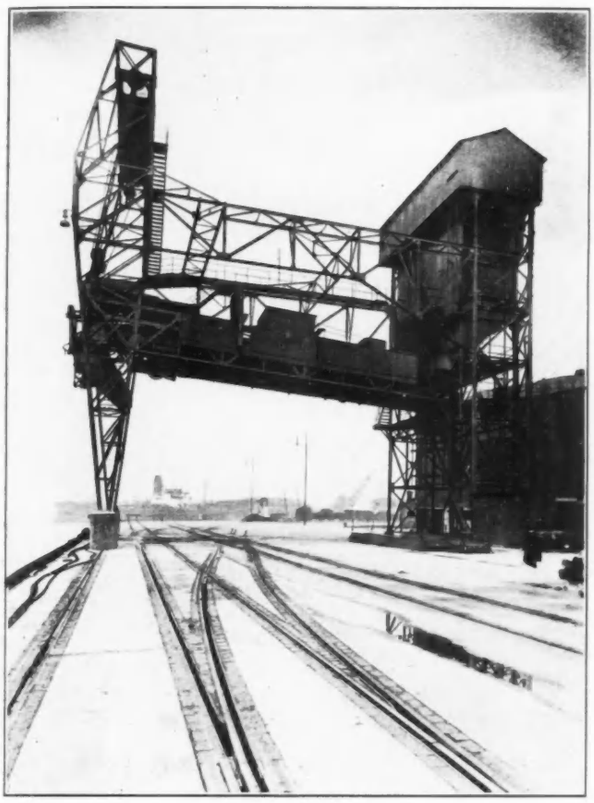
Showing Rock outside of 4—5 Monoliths.



The Electric Coal Conveying Plant on the New Quay.

New Corporation Quay at Sunderland—continued

was a big drawback as it necessitated the construction of the heavy retaining wall 40 ft. high, but the engineer has been able to use its position to advantage, for an entrance for road traffic is obtained to the top of the Quay warehouse direct from High Street. The contractors in building the Quay retaining wall had to sink four monoliths to a depth of 58 ft. because no rock was found, and even then only hard clay was reached.



The Electric Coal Conveyor on the New Quay.

Because of the soft marl a number of steel piles had to be driven at the western end of the Quay, as a protecting curtain, and this caused a little delay in the construction of the warehouse and transit shed. The building of the New Quay is not only an important addition to the facilities of the port, but it has had the effect of vastly increasing the navigable portion of the river near the Quay. The extensive dredging carried out has resulted in increasing the navigable area of the river by a width of no fewer than 200 ft., beside the whole length of the Quay.

A matter to which great attention was paid was the lighting of the warehouse, which has been designed according to the very latest principles and generally follows the style adopted in the latest sheds built in the Port of Southampton. The aim of the system is to provide even illumination over the whole floor space in the sheds, but without dazzling. Special attention has also been paid to the lighting of the Quay because, while it is important that the illumination should be good and without shadows over the whole area, yet ships passing up and down the river must not be dazzled by the Quay lights. The system adopted is the same as that recently put into operation by the Port of London Authority at their latest new dock entrance at Tilbury. This was inspected by the engineer of the new Quay before a decision upon the lighting system was reached. The system consists essentially of powerful lamps in deep shades having a quick cut-off so that outside the actual lighted area the lamps cannot be seen. Other details which required careful attention were the provision of an adequate water supply and arrangements for dealing with outbreaks of fire. There are 5,700 ft. of water pipes on the Quay, and twenty-six fire hydrants.

The Coal Conveyor delivering Coal to a Vessel.

The Contractors.

The whole of the work was carried out under contract, and the contractors responsible were:—

Quay construction:—Peter Lind and Co., Ltd., Westminster, London.

Dredging:—K. L. Kalis, Sons and Co., Stone House, Bishopsgate, London, E.C.

Warehouse and transit-shed:—Stewart Partners, 105, Baker Street, London, W.1.

Cranes:—Cowans, Sheldon and Co., Ltd., Carlisle; and Clarke, Chapman and Co., Ltd., Gateshead.

Coal conveyor:—Mitchell Conveyor Co., Ltd., 1, Bedford Square, London, W.C.1.

Warehouse lighting:—Sunderland Forge and Engineering Co., Ltd.

Warehouse doors:—Potter Rax Gates Co., Wilton Works, Shepperton Road, London, N.1.

Electric fittings:—General Electric Co., Ltd., Magnet House, Newcastle-on-Tyne; and Magnet House, Kingsway, London.

Equipment of the Guinness Malt Silos at Park Royal

In connection with the establishment of a branch of the Guinness Brewery at Park Royal, near London, the Park Royal Development Company, Ltd., have placed an order with Henry Simon, Ltd., the well-known conveying engineers of Cheadle Heath, near Manchester, for the equipment of the granary which is now being erected for the storage of finished malt. Messrs. Simon's contract comprises the machinery for the reception of grain, its cleaning, weighing, and distribution to the various bins in which the grain will be stored, and the delivery from the bins to the brewery.

The equipment will include a number of band conveyors and elevators for transporting the grain, Simon " Reform " automatic weighers, " Duplex " grain cleaners and separators, and a very complete dust-collecting system comprising suction filter dust-collectors and fans. The machinery will be of all-metal construction, and all elevator trunking and spouting will also be of steel.

There will be several independent grain intake plants, each comprising receiving hoppers, elevators, conveyors " Reform " weighers, a " Duplex " separator for removing combings and a similar machine for taking out small grain. Conveyors at the top of the silo will deliver the grain to the storage bins, and further conveyors will be arranged below the bins for transferring grain to the loading-out plant. The grain will finally be weighed on " Reform " 6 cwt. automatic weighers and delivered to two conveyors arranged in a gantry, connecting the silo with the brewery, which will be a separate building. A special plant will be provided for dealing with the small grain removed by the separators. The complete electrical equipment of the silo will also be supplied by Messrs. Simon.

The consulting engineers are Sir Alexander Gibb and Partners, Queen Anne's Lodge, Westminster, London, who are responsible for all the work in connection with the Guinness Brewery at Park Royal.

Port of Southampton Topics

Docks Statistics for September.

SOUTHAMPTON DOCKS statistics for September were on the whole quite satisfactory despite the fact that certain slight decreases were recorded.

The number of vessels inward increased by one, the figure for the month being 291 as compared with 290, but outward there was a drop of 5 ships, the total being 283 as against 288.

In the aggregate both gross and net tonnage showed an advance as compared with September, 1933. The inward gross total amounted to 1,883,125 tons as compared with 1,783,464 tons, an increase of 99,661 tons. This more than compensated for the reduction of 1,754 tons outward. The latter tonnage dropped from 1,831,805 tons to 1,830,051 tons.

The net returns show a rather similar state of affairs, for while there was a drop in outward tonnage amounting to 12,605 tons the inward increase was 46,039 tons. The actual returns were: inward, 964,336 tons as against 918,297 tons; outward 940,453 tons as against 953,058 tons.

The volume of cargo handled in the docks during September was less than in the corresponding month in 1933, but the decrease was comparatively slight. It was a pity, nevertheless, that the splendid sequence of increases, both in imports and exports, which were recorded in June, July and August, should have been broken.

Inward cargo rose from 52,855 tons to 54,597 tons, an advance of 1,742 tons, but outward the figure fell from 32,660 tons to 30,282 tons, a deficit of 2,378 tons.

There was also a slight decrease in the number of passengers handled at the port during September. Arrivals numbered 39,766 as against 40,653, and departures 35,530 as compared with 34,946. The inward fall was therefore 887, while the outward increase was 584.

Troops outward totalled 2,997 as against 4,691.

Annual Overhaul of the Big Liners Commences.

The annual overhaul of the big liners has begun at Southampton, and from now until the spring one or another of the ocean giants will be in dry dock.

It is gratifying to Southampton to know that the merging of the interests of the Cunard and White Star Lines will not affect the overhauling arrangements at the port. Messrs. Harland and Wolff, Ltd., will be responsible for the work on the former White Star trio of ships, "Majestic," "Olympic" and "Homeric," while Messrs. John I. Thornycroft and Co., Ltd., will continue to deal with the former Cunarders. They will carry out the work on the "Berengaria" and "Aquitania," and should the "Mauretania" undergo a routine overhaul they will deal with her as well. At the moment, however, there is no definite news of the future of the famous "Old Lady of the Atlantic," for up to now her name does not appear in either the autumn or winter sailing schedules. It is generally accepted, nevertheless, that the "Mauretania" has not yet finished her career, and that before long she will be found remunerative work in the cruising field.

The "Olympic" is the first of the Company's vessels to undergo overhaul. Then will follow the "Homeric," the "Aquitania," the "Berengaria" and the "Majestic."

The Canadian Pacific Liners will also receive their usual overhauls at Southampton.

All the vessels are being dry-docked, the new graving dock at Millbrook, and the Trafalgar Graving Dock being used. The floating dock is not likely to be called upon except in a case of emergency.

Holland-Africa Liner to call at Southampton on Maiden Voyage.

An event of considerable interest and significance is due to take place at Southampton Docks on November 7th, when the new Holland-Africa liner "Bloemfontein," will call to embark passengers on her maiden voyage to Cape Town. The question which is being asked is whether this marks the beginning of a new service for the port.

The "Bloemfontein," with her sister ship "Jagersfontein," now in course of construction, marks a notable advance so far as this Company's service is concerned. Both the new ships are designed for passenger and cargo traffic.

Opening of New Flour Mills at Southampton.

On 4th October last the new Solent Flour Mills of Messrs. J. Rank, Ltd., the first important group of industrial premises to be erected on the Docks Extension Estate, were officially opened by the Mayor of Southampton. The mills, which occupy an area of two acres and include an eight-storied warehouse and silo with storage capacity for 15,000 tons of grain, will act as a centre for distribution of the firm's products to southern England. At a luncheon which followed the opening it was stated that the land upon which the new buildings were situated was part of 131 acres which had been set aside on the new Docks Estate for industrial development purposes. Eminently suitable for the location of factories, the site had direct access to deep water, rail and road transport, and thus positioned at one of Britain's greatest ports also commanded an intensely-populated hinterland, comprising 16,000,000 people within a radius of 100 miles.

Increase in Shipments of Citrus Fruit.

Comment was made in these notes recently of the continued substantial increase in the banana traffic passing through the docks. It is satisfactory to be able to record similar progress in regard to another important fruit traffic dealt with at Southampton, i.e., South African citrus fruit. Shipments so far this year have exceeded those for the corresponding period of 1933 by 13 per cent., a total of 1,254,000 boxes having been received to the end of September. There is now every prospect of the season's final figures being substantially in advance of the record 1933 total when 1,652,457 boxes were discharged at the docks from the Union.

Reconstruction and Modernisation Scheme at Leningrad.

The repair station at "Gunners Island," Leningrad, in which the ships belonging to the Harbour Board are overhauled, is no longer equal to the demands made upon it. Its mechanical equipment is worn out and out of date, and it is difficult for the ships to approach owing to its narrowness and short water front. The Harbour Board has therefore decided on a complete reconstruction and modernisation scheme. This will involve the shifting of the majority of the equipment to the west side of the island, and the creation of a protected harbour basin by the construction of a mole. This will be about 858 yards long, and will be made of wooden piles with stone filling; work on it has already been started. Ships will enter the new basin by way of the estuary of the Neva, before which will be placed a protective dam 375 ft. long. The cost of the plant and extensions is estimated at about £2,500,000, of which £150,000 will be provided during the present year.

In addition to this, the "Left Pier" of the Leningrad Harbour, the middle and Southern sections of which are at present provided with only wooden quays, will be improved by the building of 1,650 ft. of concrete wall.

Welding in Engineering Practice.

How electric welding is modifying civil engineering practice was described by Mr. J. Harcourt Williams, chairman of the Manchester and District Association of the Institution of Civil Engineers. His subject was "Electricity in relation to civil engineering."

Electric welding, he said, was eliminating castings in the construction of many types of machine. Its use for structures and bridges had not, however, made so much progress in this country as in others. There need not be hesitation in applying arc-welding to structures provided the welding was done in a proper manner and continually inspected.

Mr. Harcourt Williams said that electricity was now largely used for operating lock gates and sluices, and for mechanical shovels and excavators. In many parts of the world the use of these high-powered excavators permitted work to be carried out which for economic or other reasons could not be undertaken at all if only manual.

Bombay Port Trust.

At a meeting of the Trustees of the Port of Bombay, held on 9th October, 1934, the following were the main items of business disposed of:—

The following expenditure estimates were approved:—

Rs. 26,750 for roofing certain passages in the Ryan Grain Market as part of a scheme for re-roofing all the passages in the market during a period of two years.

Rs. 19,270 for replacing the east boundary fence of Alexandra Dock between the White Gate and the Ferry Wharf by steel pale fencing.

The Board considered tenders for handling goods in the Port Trust Railway General Shed at Grain Depot and accepted the lowest tender, that of Mr. Aziz Gafur Kazi, for one year with effect from 1st November, 1934.

Amendments of the Docks Scale of Rates and the Bonded Warehouse Scale were approved, subject respectively to the sanction of Government and the Collector of Customs, to provide for reduction in re-packing, re-bagging and miscellaneous service charges to the pre-war level.

Notes from the North

Mersey Pilotage Question.

IMPORTANT ship-owning interests have made application to the Board of Trade for an order to alter the Liverpool pilotage district, for which the Mersey Docks and Harbour Board are the authority. They seek the abolition of the Western pilotage station, better known as the Point Lynas station. This, for many years, has been a bone of contention between shipowners and pilots as to whether the Point Lynas station could or could not be dispensed with. Outward pilotage ends at the Mersey Bar, whereas inward pilotage, between Point Lynas and the Bar, is compulsory. The closing of this station, the shipowners estimate, would save approximately £17,000 a year in the costs of the pilotage service.

The pilots, through their association, and supported by the parent body, The United Kingdom Pilots' Association, oppose the proposal to close the Point Lynas station. They contend that frequently weather and water conditions render it dangerous in the extreme for pilots to board inward-bound vessels at the Bar.

The question of maintaining the Point Lynas Pilot Station, in addition to that at the Mersey Bar, has been the subject of enquiry by the Mersey Docks and Harbour Board. It was in 1781 the then Pilot Commissioners established a Pilot Station with a signalling staff at Point Lynas, the object being to enable ships to get into smooth water to take pilots on board. The building used for this purpose was about 550 yds. to the southward of the present lighthouse, which was built in 1834 by the ten trustees of the Liverpool Docks, after which the old station was abandoned. On the present Board being constituted in 1857, the Point Lynas Lighthouse premises became vested in that Board as part of the trustees' property, and in 1878 extensive alterations and additions were carried out. The Point Lynas Lighthouse and Telegraph Station has been an outpost of the Port of Liverpool, and the pilot boat on the First or Western Pilotage Station of the port is always on duty in the vicinity of Point Lynas—inward-bound vessels from the westward taking their pilots at that point.

Transfer from Birkenhead.

The Docks and Quays Committee of the Mersey Docks and Harbour Board has had under consideration a letter from the Clan Line Steamship Co., Ltd., applying that berth and shed accommodation be appropriated to the use of their vessels at Canada Branch Docks, Nos. 2 and 3, for a period of three months. This is the sequel to the decision of the Birkenhead dock labourers not to work overtime.

Mr. Walter Harding (acting-chairman of the Docks and Quays Committee) told the Board at their meeting on 20th September, that the Clan Line had built up a good business in Birkenhead, which had been retained by prompt sailings and guaranteed delivery of cargo overseas. During the last few weeks the Company had been unable to keep their engagements owing to special circumstances. The berths which the Clan Line wanted at Liverpool were unappropriated at the present time, and there could be no possible reason why the line in question should not have them, and by that means retail into the Port of Liverpool the trade which they were in danger of losing.

The Board agreed.

Preston Dock Visit.

Between 40 and 50 members of the Manchester, Liverpool and District Section of the Institute of Transport on October 15th, took the opportunity of visiting and inspecting Preston Docks and the Dick Kerr Electrical Works, Preston. Mr. J. G. Merriweather, traffic manager and general superintendent of Preston Docks, is, of course, the chairman of the section. The party assembled at Preston Station and was conveyed to the east end of the Preston Docks, where the tug "Perseverance" conveyed the party along the dock and a short distance on the River Ribble, in order to see the dredger and similar craft at work. On their return the party visited the Dick Kerr Electrical Works, tea being served at the Power Station.

Manchester Ship Canal.

Another satisfactory traffic return is forthcoming from the Manchester Ship Canal. The traffic returns for September show that receipts were larger than in the corresponding month of last year. Receipts were £90,052, compared with £94,031 for August, and an increase of £13,972, as compared with those for September last year. Total receipts for the first nine months of this year were £882,467; this is the highest figure for the period for any year since 1930, and represents an increase of £53,888, as compared with the figure for the corresponding months of 1933. Altogether the position for 1934 is much more satisfactory than for the last two or three years.

River Wyre Bridge.

Now under consideration is a plan prepared by Mr. Edwin A. Lawrence, of Carr Road, Fleetwood, for bridging the River Wyre at Fleetwood.

"The reason I suggest the bridge roadway being built solid on the Fleetwood side is because on the plan I have shown a dry dock, which, in conjunction with the proposed new railway dock, it is possible to provide by coming to arrangement with the L.M.S. Railway Company. Alternatively, it could be utilised by them as one side of the new dock wall," writes Mr. Lawrence.

When the new dock is completed it might be possible, by permission of the Railway Company, for foot passengers to cross the dry dock and new dock locks, and go along the new dock wall to a footbridge which could be erected across the railway lines.

Also, on the plan is shown a traffic subway, going under Wyre Dock Station from Station Road. This could be used as a by-pass for foot passengers and traffic, if the Railway Company would allow it. It would do away with the present level crossing.

To Support the Ferry.

The Great Western Railway Company have renewed their contract with the Wallasey Corporation for the conveyance on the Seacombe goods steamers of the whole of the Company's cross-river traffic.

This is an important decision for the Wallasey ferries undertaking, in view of the fact that the Railway Company's traffic averages 250 vehicles per day and represents about 25 per cent. of the whole of the Seacombe goods traffic. The contract with the Railway Company has now been continuous for eighteen years. It was feared at one time that the Railway Company might elect to use the Mersey Tunnel.

Grain Handling.

Complaint is made in certain business circles in Liverpool of the high cost of handling grain cargoes on the Mersey, particularly in Birkenhead.

The Association of Chartered Shipbrokers have made repeated efforts to persuade Birkenhead millers to reduce their rates for discharges, but they have met with no success. They have tried also to get the Mersey Docks and Harbour Board to reduce their rates, but the Board declines to take action while the millers stand firm. The millers' reply is that they cannot afford to make any cut in their charges.

Mr. Alfred Coker, hon. secretary of the Liverpool Association of Chartered Shipbrokers, says:—"We see no reason, if the Dock Board can reduce their charges, why the private miller cannot reduce theirs. Shipowners are feeling very severely the high port charges on the Mersey, and the danger is that when trade improves and ships are more in demand than at present shipowners will cold-shoulder Liverpool in preference to other ports."

New Bridge for Liverpool Pierhead Proposed.

Consideration has been given by the Transport Committee of the Liverpool Chamber of Commerce to a proposal for the construction of a bridge to span the floating bridge at the Pier-head, Liverpool. At the meeting of the council of the Chamber of Commerce, Mr. J. Mitchell Jones suggested there should be a more convenient way of getting from the Pier-head tram terminus to the Isle of Man and North Wales boats. He thought the committee should consider the matter, because when there was a liner at the stage, people had to go right round the end of the floating bridge.

Mr. L. A. P. Warner (general manager and secretary of the Dock Board) said No. 7 bridge met the case.

Trafford Park Cold Store.

Trafford Park Cold Storage, Ltd., which is controlled by Trafford Park Estates, Ltd., Manchester, was able a year ago to report a profit of £2,412, against a loss of £1,670 for 1931-32. In the year just ended a profit of £3,044 is recorded. Port of Manchester Warehouses, Ltd., reports a profit of £9,254, as against one of £7,058 for the previous year, and one of £6,934 for the year before that.

Oil Tanks with Roofs.

At the Herculaneum Dock, Dingle, Liverpool, the Texas Oil Company is having erected two large land oil tanks, a feature of which will be new pontoon floating roofs. This is an idea which is brand new to Liverpool.

When oil is being pumped into a tanker at the jetty the liquid enters the bottom of the tank, and as filling proceeds the pontoon roof floats on top, preventing air and gases accumulating. Vapour is dispelled when the tank is empty, and so prevents evaporation.

Notes from the North—continued

Ellesmere Port.

Councillor H. Makey, at an Ellesmere Port meeting, said Ellesmere Port was the second largest oil port, with the second largest oil trade, in the United Kingdom. The customs authorities looked upon Ellesmere Port as a nest egg, for they collected £100,000 a week in revenue from the oil estate. He was proud to belong to the oil trade, which was the most progressive the country had ever known. It was not many years since petrol was taken out to sea and dumped, a shipload at a time, because it was a drag on the market. No trade had done more in research than the oil trade.

Abolition of Ferry.

Tenders are to be invited by the Bebington Council for the demolition and removal of the Eastham ferry pier, bridge and floating stage. The ferry is one of the oldest, if not the oldest, on the Mersey, and in olden days was the principal point in Wirral from which farm produce and goods were ferried to Liverpool.

Steamboats were first introduced on the service in 1832, the pioneer being the " Princess Charlotte," while two other of the earliest were named the " Old Lady " and " Maria," so called after the Lady Stanley of those days and her daughter. From 1899 until the service was abandoned in 1929, the service was maintained by paddle-boats.

In November, 1932, the Bebington Council decided to purchase the ferry, landing-stage, and pier, and certain foreshore rights from the Naylor Trustees at a figure slightly below £17,000. The estate covers about 70,802 acres.

Negotiations were opened with both Birkenhead and Wallasey Corporations with a vew to reviving the ferry service, and it was suggested that Birkenhead should continue the Rock Ferry service and include calls at Eastham, but the Corporation turned the project down.

Correspondence has passed recently between the Bebington Council and the Ministry of Transport regarding the pier and landing stage, and the Ministry informed the Council that they could either remove the structure or continue to maintain, mark, and light it. The Council has now decided to demolish the structures, but the ferry buildings on the river bank are to be left intact.

Mersey Dock Board Retirement.

Mr. Leslie Roberts, who has taken up the position of deputy-general manager of the Manchester Ship Canal Co., sent a letter to the Mersey Docks and Harbour Board which was read at the October meeting. He wrote:—" I shall be leaving to take up my new appointment with the Manchester Ship Canal Company. Therefore it is with great regret that I have to resign my seat on the Board. My period of membership has been short, unfortunately, but during that time I have found the work most absorbing and have received unfailing courtesy and kindness from my colleagues and officials. May I thank you personally for your help and the interest you have shown in me, which I much appreciate. I would like to assure you that in the course of my new duties I will always be happy to co-operate to the fullest degree with my old friends and associates in Liverpool."

It was only in January last year that Mr. Roberts was elected to the Dock Board.

Port Sunlight Transport.

Mr. George B. Lissenden, dock and traffic superintendent of Messrs. Lever Bros., has been appointed traffic controller of the firm's concerns on the whole of Merseyside, of the Midlands and Ireland.

Mr. D. A. Elwes and Mr. H. W. Smart, one of Mr. Lissenden's assistants, will be respectively indoor and outdoor traffic managers to follow him at Port Sunlight.

Mr. Lissenden began his career with the Midland Railway Co. at Bristol, and at 24 was assistant goods agent there. He later secured an appointment as traffic manager to Messrs. Christopher Thomas and Bros., one of the oldest soap manufacturing firms in the country. When the firm was taken over by Messrs. Lever Bros., nearly 20 year ago, Mr. Lissenden was transferred to Port Sunlight, subsequently attaining his present position. Since his advent at Port Sunlight, he has revolutionised the whole of the traffic arrangements there, and has been in charge of the firm's immense transport arrangements.

Lighthouse Proposal.

Coast watchers have been placed at Peel Hill, Isle of Man, to take a count of all the shipping passing Peel in view of the proposal to build a lighthouse at the back of the hill. This has been spoken of for years and years, but it is believed that this is the first real step towards any decision. Some years ago, the Northern Lights Commissioners' relief boat, " Hesperus," was at Peel, and the officers on board visited Peel Hill and made a survey of the land. There have been no wrecks near the Peel coast in recent years, although two cargo steamers were ashore at Dalby some years ago.

Hull and the East Coast

Government Approval of Scheme for Improvement of Ferry Facilities on Humber.

THE Government approval of the scheme for the improvement of ferry facilities on the Humber between Hull and North Lincolnshire has been received, and the Humber Conservancy requirements having been complied with, there is nothing now to prevent the work being pushed forward with all speed. The Hull Corporation, on their part, have undertaken to make alterations at the Ferry Coal Dock and to construct a floating pontoon at the Victoria Pier; while the London and North-Eastern Railway, on their part, have undertaken to make certain improvements at the pier at New Holland, on the Lincolnshire side, and to provide two new steamers to be used in the service. These ferry boats, of the most modern type, have already been launched at the West Hartlepool shipyard of William Gray and Co., Ltd., one being named " Wingfield Castle," by the Mayoress of Hull, and the other " Tattershall Castle," by Miss Pamela Wilson, daughter of Sir Murrough Wilson, Deputy-Chairman of the London and North-Eastern Railway. The entire scheme will cost £150,000, and is to be met by the collection of tolls on the cross-river traffic, so far as the Hull Corporation's share is concerned.

Urgent Need of Dredging the Harbours of Whitby, Scarborough and Bridlington.

A decision has not yet been reached in the matter of the dredging of the harbours of Whitby, Scarborough and Bridlington, which it has been proposed to undertake on a co-operative basis. That a very necessary work is waiting for urgent attention was very obvious to our correspondent, who in recent weeks visited each of the three Yorkshire ports and saw for himself the enormous amount of silting that has taken place.

At the annual meeting of the Bridlington Harbour Commissioners a week or two ago, regret was expressed that the Conference of the three authorities had not been attended with the success desired, and it was resolved " that the matter should be further discussed in Committee."

The Works Committee reported that " if the necessary funds can be raised this important question should be dealt with as soon as possible," and the view of the Commissioners, as a body, is that the dredging of the harbour is of greater importance than the proposed new landing stage. It is still hoped that it may be possible for the three ports to agree upon a scheme for the joint ownership of a dredger, or alternatively, the purchase by one authority who would lend it to the other authorities. Greater progress towards agreement may be anticipated when the affairs of the Scarborough Harbour Commissioners had been straightened out, and they are in a better position to discuss the matter. A Government grant is also hoped for.

Meeting of Bridlington Harbour Commissioners.

The report presented by the Works Committee to the Bridlington Harbour Commissioners at their annual meeting contained a reference to the acquisition by the Bridlington Corporation of certain portions of the foreshore. The Committee had communicated with the Minister of Agriculture and Fisheries suggesting that any conveyance to the Bridlington Corporation of the foreshore should exclude any portions thereof, including the harbour and piers, which comes within the definition of Clause 12 of the Bridlington Harbour Confirmation Act, 1928. The Committee had been informed that the Board of Trade did not propose to include in the Conveyance to the Corporation any foreshore thus defined, and it is desired that the Ministry of Agriculture and Fisheries should act likewise.

North-East Coast Notes

Interesting Tyne Schemes.

INTERESTING schemes are before the Tyne Improvement Commission and Newcastle City Council at present, which will probably have considerable effect on local trade in the future. At the September meeting of the Tyne Improvement Commission a proposal to build a new bridge over the Tyne was carried a stage further when a report on the matter was considered. It had been prepared jointly by Mr. W. J. Steele, City Engineer of Newcastle, Mr. W. J. Merrett, Durham County Engineer, and Mr. R. F. Hindmarsh, Chief Engineer of the Tyne Commission. The bridge is to cross the Tyne in the neighbourhood of Scotswood, where there is at present an old suspension bridge which most effectually stops the passage of all traffic of any considerable size. The question of the actual building of the bridge, of course, rests in the hands of the authorities. It was suggested that in the joint report that the central span should be of steel-work on masonry abutments. The estimated cost of a high level bridge was £873,000, and of a combined road and rail moveable bridge £916,000. A combined road and rail moveable bridge would meet the requirements of the road authorities. It would have the great advantage of opening up the upper reaches of the river, and the adjoining areas for development.

The Commission's Works Committee recommended that the Town Clerk of Newcastle be informed that, subject to satisfactory arrangements between Durham County Council, the Corporation of Newcastle, and the Tyne Commissioners, in the event of the erection of a combined road and rail moveable bridge to take the place of the existing Scotswood suspension and railway bridges, the Commissioners would regard the cost of operating the moveable bridge as a charge for their accounts. One of the conditions was that the County Council, the Corporation, and Railway Co. would not oppose an application by the Commissioners for Parliamentary powers to levy a toll on vessels passing the bridge.

Colonel F. R. Simpson, moving the adoption of the recommendation, said the Commission would not approve of any bridge which would impede traffic in the upper reaches of the river.

Mr. R. S. Dalgliesh asked what would be the cost of operating a combined road and rail bridge. The Newcastle Swing Bridge had been a nuisance to shipping ever since it had been built.

Mr. R. F. Hindmarsh, Chief Engineer, said it was proposed to erect a vertical lift bridge with a clear water-way of 230 ft., compared with 90 ft. at the Tyne Bridge.

Col. Simpson said the operating costs would be about £1,000 a year.

Mr. H. P. Everett said there were unbounded possibilities in connection with the project, and Sir Arthur Sutherland spoke in similar terms.

The recommendation was agreed to.

Quay Extension Scheme.

The other scheme, which involves an extension of Newcastle Corporation Quay, is that of Messrs. Spillers, Ltd., to erect a large mill on ground adjoining the Quay at a cost of about £300,000. The City Council, at their September meeting, adopted a report of their Trade and Commerce Commitee, which included the following suggestions: Council to construct a new Quay providing 10,000 sq. yds. of space at a cost of £125,000, or, alternatively, one providing 12,000 sq. yds. at a cost of about £146,000; making an agreement that they will, if required, add 5,000 additional sq. yds. of quay space at a cost of £70,000, and lease a space as the site for a new mill to Messrs. Spillers for 99 years, at rentals for the three schemes respectively of £833, £1,000, and £1,417. This was subject to Messrs. Spillers undertaking to build the new mill. The Corporation is also to take over Spillers' old mill for £27,500. There was some criticism of the proposals in detail, but eventually the scheme was approved by thirty-nine votes to four.

Some Good Trade Reports.

Statistics submitted by the various committees at the September meeting of the Tyne Improvement Commission showed that the coal and coke shipments were substantially ahead of the figures for a year ago; exports and imports of general merchandise had increased; nearly a dozen ship launches indicated at least some recovery in shipbuilding, and trade above Newcastle bridges, always a useful barometer, had been appreciably brisker than in the first eight months of 1933. The coal and coke shipments from the river in eight months of this year totalled 9,335,720 tons, against 8,370,396 tons a year ago, an increase of 965,324 tons. Bunker coal shipments this year were 32,699 tons better than a year ago. Oil fuel bunkers shipped totalled 13,578 tons, compared with 9,824 tons, an increase of 3,754 tons. From January 1st to July 31st, the general merchandise imported into the river totalled 1,080,522 tons, showing a net increase of 217,094 tons on last year.

Striking figures were submitted to the monthly meeting of Blyth Harbour Commission in September by Mr. Ridley Warham, chairman. For the eight months ended August 31st coal shipments were: 1934—4,192,541 tons; 1933—3,574,682 tons; 1929—3,679,034 tons. These totals show an increase in 1934 of 17 per cent. on 1933, and 14 per cent. on 1929. Up to the end of August the increase in coal shipped, as compared with 1933, amounted to 617,859 tons, and if the same rate of shipment were maintained as last year the total for the year would exceed six million tons. The engineer reported that the contractors had finished their work in connection with the steel piling at the extension of the tidal basin. The western end is being prepared so that the work of dredging the area can be begun in the near future. It is proposed to do this with the Commissioners' own dredging plant.

A record was established by timber imports into Sunderland during August with 34,185 loads. This figure brought the imports of timber for the eight months up to 90,855 loads, compared with 72,311 loads in the corresponding eight months last year. Over the same period several other imports showed increases, including iron ore, from 1,965 tons last year to 24,212 tons this year, esparto grass, from 14,634 tons to 15,579 tons; grain, from 10,136 tons to 11,093 tons, and cement from 11,187 tons to 11,745 tons. Exports during the eight months ended August 31st, were: 32,269 tons, against 28,780 tons last year. Coal and coke shipments for the same period were 2,649,486 tons, compared with 2,611,032 tons.

Sunderland's New Quay.

After three and a half years' work, Sunderland Corporation Quay was formally opened on October 10th, by Sir John Priestman, Bart. It has been constructed at a cost of about £350,000. Speaking at the opening ceremony, Sir John said when it was decided to commence that vast undertaking they had little idea that the terrible slump then existing would continue so long. Now that work was completed. Shipping business was a little better, but so many hundreds of ships were laid up still, that this magnificent Quay could not possibly be used to its full capacity. There must, however, be a good time coming, even for shipping, and then he felt convinced that Sunderland would praise the Corporation and the Commissioners for having had the courage to build such a deep-water quay, which would then prove a great acquisition and the means of attracting vessels that in the past could not well go there, on account of the delay in getting in and out of the docks and thereby losing valuable time and money.

Port of London Notes

London's Shipping.

During the week ended September 28th, 910 vessels, representing 977,127 net register tons, used the Port of London. 500 vessels (793,536 net register tons) were to and from Empire and foreign ports and 410 vessels (183,591 net register tons) were engaged in coastwise traffic.

* * * *

During the week ended October 5th, 980 vessels, representing 886,521 net register tons, used the Port of London. 474 vessels (714,916 net register tons) were to and from Empire and foreign ports and 506 vessels (171,605 net register tons) were engaged in coastwise traffic.

* * * *

During the week ended October 12th, 1,235 vessels, representing 946,490 net register tons, used the Port of London. 487 vessels (750,141 net register tons) were to and from Empire and foreign ports and 748 vessels (196,349 net register tons) were engaged in coastwise traffic.

* * * *

During the week ended October 19th, 1,033 vessels, representing 910,878 net register tons, used the Port of London. 483 vessels (708,395 net register tons) were to and from Empire and Foreign Ports and 550 vessels (202,483 net register tons) were engaged in coastwise traffic.

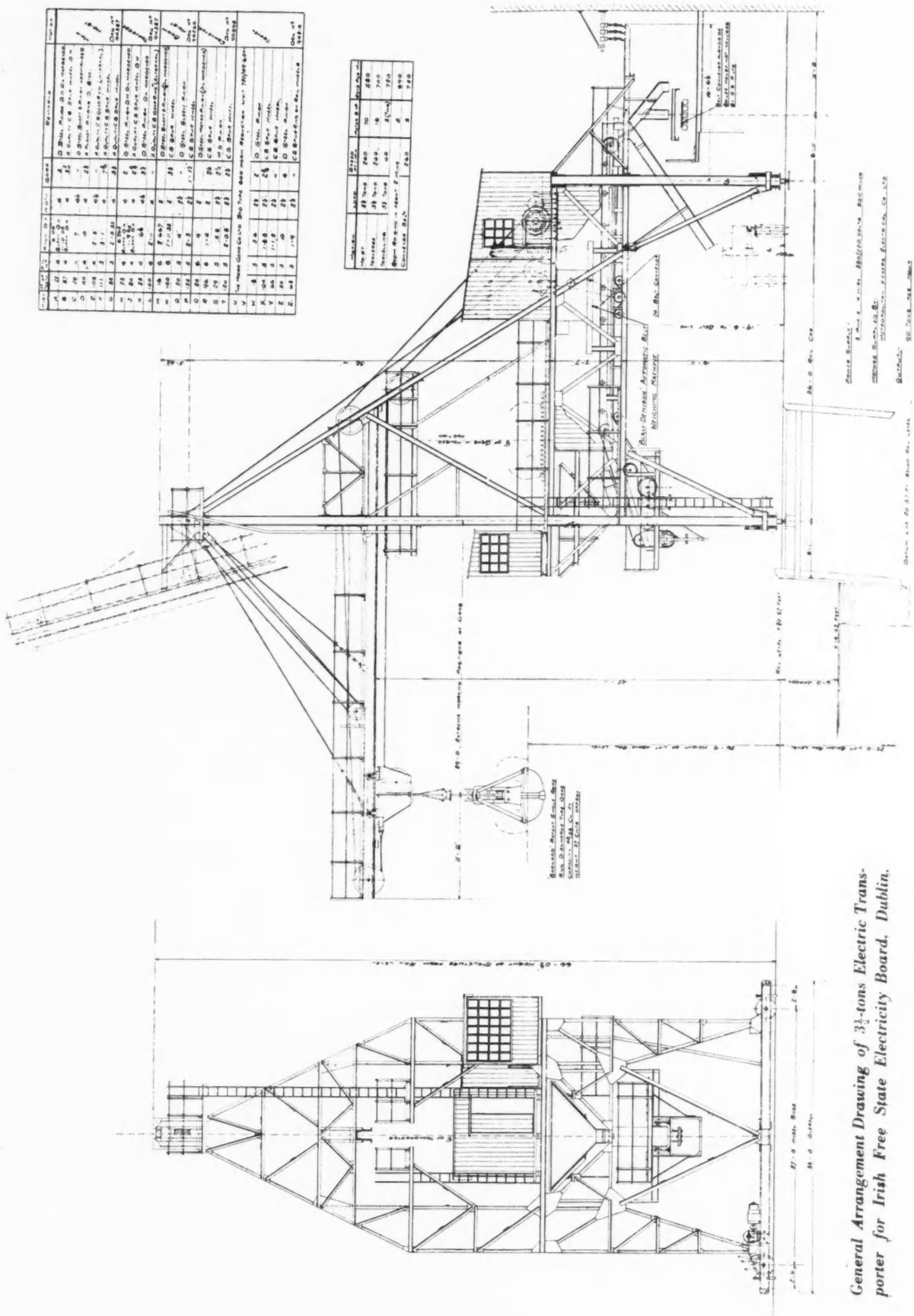
Tilbury Passenger Landing Stage.

During the month of September 61 vessels, totalling 710,298 gross register tons, used the P.L.A. Tilbury Passenger Landing Stage.

Personal.

Sir David J. Owen accompanied by Lady Owen and his personal assistant, Mr. Robert Letch, arrived back in London on 15th October, 1934, after a tour of the Union of South Africa. The object of the tour was the study of South African trade and ports.

Two Transporters for Dublin



General Arrangement Drawing of 3½ tons Electric Transporter for Irish Free State Electricity Board, Dublin.

Two Transporters for Dublin

THE Electricity Supply Board, Dublin, have recently placed an order for two grabbing transporters with Stothert and Pitt, Ltd., Bath, and these will be used on their wharf at Pigeon House, Dublin.

The equipment, which is being supplied by Stothert and Pitt, Ltd., comprises two grabbing transporters for transferring the coal from colliers to conveyors running parallel to the face of the wharf. The latter are not included in this firm's contract.

The general arrangement of the transporters is shown on the diagram, which will probably be self-explanatory in most respects.

On each machine the grab, which is of the single rope ring discharge type with a 68/58 cubic feet capacity, is suspended from a travelling carriage running on a horizontal beam at about 43 ft. above rail level. The hoisting and traversing winch is arranged at the back of the transporter, the hoisting gear incorporating an epicyclic motion with suitable clutches, to enable the grab to be hoisted or lowered and traversed simultaneously. The coal is discharged into a receiving hopper arranged in line with the front leg, and from this hopper the material is fed on to a 24 in. wide troughed belt conveyor which transfers the coal to a point adjacent to the boiler house wall, where it is fed into a three-way chute fitted with valves controlling its delivery either to lorries or direct into hoppers feeding the boiler house conveyors, or to a longitudinal conveyor delivering to the storage ground.

During the transit of the coal over the conveyor, it is weighed by a " Blake Denison " continuous type belt weighing and recording machine, thus enabling the amount of coal which is delivered to the station to be accurately measured. The cantilevered boom extending beyond the face of the quay is hinged, to enable the transporters to be moved in line with the holds of the vessels by raising the boom clear of the ships' masts and rigging. The boom-lifting winch is accommodated in the machinery cabin at the back of the machine, and the whole appliance is traversed by travelling mechanism arranged on the sills at rail level. The whole of the machinery is mounted on a mild steel structure suitably braced, the lower portion being arranged in the form of a portal to allow for the passage of traffic along the wharf, the rails being at 36 ft. centres. The output of each transporter is 90 tons per hour, working at the rate of 60 cycles per hour, the speeds of the various motions being indicated on the diagram. The whole of the motions are controlled by an operator stationed in a cabin suitably arranged on the seaward side of the front leg.

Aden Port Trust

The returns of shipping using the Port of Aden for the month of August, 1934, are as follows:—

	No.	Tonnage
Merchant Vessels over 200 tons ...	142	578,301
,, ,, under 200 tons ...	—	—
Government Vessels	4	12,674
Dhows	58	1,563
PERIM.		
Merchant Vessels over 200 tons ...	25	63,276

Imports during the month were above those for August, 1933, in the case of hardware, seeds, sugar, white piece goods, unmanufactured and manufactured tobacco; and below, in the case of coffee, grain, pulse and flour, gums and resins, raw hides, raw skins, grey, printed or dyed piece goods, twist and yarn, and private treasure.

Exports were above those for August, 1933, in the case of coffee, grain, pulse and flour, gums and resins, raw hides, sugar, white piece goods, unmanufactured and manufactured tobacco, and private treasure; and below, in the case of hardware, seeds, raw skins, grey, printed or dyed piece goods, and twist and yarn.

TRADE OF THE PORT.

Article.	Unit	Imports		Exports	
		Quantity.	Value Rs.	Quantity.	Value Rs.
Coal	Tons	5,402	91,460	0	0
Coffee	Cwts.	4,401	1,15,915	7,041	2,38,686
Grain, Pulse and Flour	,,	30,430	1,46,007	22,641	1,04,690
Gums and Resins	,,	269	5,022	1,265	30,401
Hardware	—	0	20,439	0	18,157
Hides, raw	No.	880	554	4,700	2,900
Oil, Fuel	Tons	78,830	19,70,750	0	0
,, Kerosene	Gls.	21,808	14,900	6,000	4,039
,, Petrol	,,	22,794	22,919	3,900	5,160
Salt	Tons	0	0	29,055	2,94,360
Seeds	Cwts.	3,790	27,144	271	2,869
Skins, raw	No.	233,158	1,10,977	190,332	1,18,845
Sugar	Cwts.	19,019	88,790	27,682	1,34,314
Textiles—					
Piece Goods, Grey	Yds.	2,571,675	3,15,274	1,923,320	2,38,785
,, ,, White	,,	669,359	1,00,019	302,082	51,839
,, ,, Printed or Dyed	,,	803,092	1,49,396	955,589	2,01,819
Twist and Yarn	Lbs.	91,978	48,047	94,800	44,327
Tobacco, Unmanufactured	,,	1,794,072	3,64,445	853,688	1,42,236
,, Manufactured	,,	69,875	54,625	43,029	23,467
Other Articles	No. of Pkges.	46,147	8,66,777	15,299	3,28,154
Treasure, Private	—	0	2,36,226	0	2,46,992
Total ...	—	—	47,49,686	—	22,32,040

The number of merchant vessels over 200 tons that used the Port in August, 1934, was 142, as compared with 112 in the corresponding month last year, and the total tonnage was 578,000, as compared with 463,000.

Excluding coal, salt, fuel oil and Military and Naval Stores and Transhipment cargo, the total tonnage of imports in the month was 7,200, and of exports 4,900, as compared with 7,500 and 4,300 respectively for the corresponding month last year.

The total value of imports, excluding Government Stores, was Rs.47,50,000/-, as compared with Rs.38,35,000/- for August, 1933, and of exports Rs.22,32,000/-, as compared with Rs.24,98,000/-.

The total value of both imports and exports together was Rs.69,82,000/-, as compared with Rs.63,33,000/- for corresponding month last year.

Traffic at the Harbour of Santos, Brazil.

The total number of vessels entering the harbour of Santos in the second quarter of the current year amounted to 709 with a net registered tonnage of 2,636,323, as against 712 ships with 2,507,162 n.r.t. in the first quarter of the year. The number of ships leaving the harbour was for the same period 671 with 2,506,592 n.r.t., as against 695 with 246,352 n.r.t. in the first quarter. The total weight of imported goods unloaded was 140,091 tons in April, 83,132 tons in May, and 86,809 tons in June, making a total for the three months of 310,032 tons.

LEGAL NOTES

Damages Consequent on Breaches of Dock Regulations

IT is a general rule of law that the occupier of premises cannot be held liable for injuries suffered by an invitee who " would not, in the proper and ordinary course of things, or without his own unauthorised and unreasonable act, have been within reach of the danger at all." The judgment of the Court of Appeal in *Hillen and Another v. I.C.I. (Alkali), Ltd.* (1934) 1 K.B. 455, may be thought an extreme application of that principle but, on the other hand, the terse and characteristic words of the late Lord Justice Scrutton to the effect that there is no obligation to make illegal operations safe, cannot be disregarded.

In the case referred to, the plaintiffs, who were stevedores, were loading cargo from the hatch coverings of the defendants' barge, a proceeding forbidden by Rule 34 (b) of the Docks Regulations, 1925, when the coverings gave way causing the plaintiffs to fall into the hold. They admitted knowing that loading from the hatch coverings was " wrongfully dangerous," but said that the engineer of the barge had invited them to load from there. The Court of Appeal held that even if the words of the engineer could be construed as an invitation, it was outside the scope of his authority to give it, and came to the conclusion that " the illegality of the operation of loading from the hatchways, known as it was to the plaintiffs, prevented any duty on the barge-owners other than that to abstain from doing acts to injure the stevedores in doing their work " or otherwise, as Greer L.J. put it, " the plaintiffs' claim falls to be determined on the basis that they were not invitees but trespassers at the time they met with their injuries! "

The barge was fitted with three fore and aft beams to support the hatch coverings, and if these beams had been in position when the plaintiffs were loading from the hatches, the collapse of the hatch coverings would not have caused the plaintiffs to fall into the hold. Interpreting the jury's verdict that " the plaintiffs took the risk unknowingly " as meaning that they did not know of the defendants' failure to replace these beams after the previous cargo had been taken from the hold, the Court had to consider whether this failure constituted an added and unusual risk as to which it was the duty of the defendants to warn the plaintiffs. The Court decided that it did not because there was no evidence that the beams were in position when the plaintiffs came on board so that there had been no alteration of the premises at all. There was no obligation, statutory or otherwise, resting on a barge-owner to have fore and aft beams to support his hatch covers, or (if he had) to keep them in position; while, as has been pointed out, there was a definite prohibition against exposing hatch coverings (whether supported by beams or not) to damage, as was done in this case by placing heavy cargo on them.

It is clear that the defendants would have been held liable if, without giving warning, they had done some act endangering the plaintiffs while the latter were engaged in the illegal operation; for example, if the plaintiffs had decided to risk loading from the hatches because the fore and aft beams were in position and the defendants had removed the beams when the loading was in progress. But as the facts stood, the barge-owner did not incur any obligations to the stevedores when his crew to their knowledge had not put up the beams, even if his crew took part in the illegal operation of loading from the hatch-coverings.

One of the judges made this general observation:—" I think it is of great importance that the dock regulations which are designed to ensure protection to life and property should be strictly enforced, and that persons knowingly breaking them should not be entitled to escape the effects of their conscious breaking of the law."

Bombay Port Trust

Before proceeding with the regular business on the agenda of the meeting held on 14th August, 1934, the Trustees of the Port of Bombay adopted a resolution expressing their deep regret at the death of their former colleague, Sir Manmohandas Ramji, Kt., who was a prominent member of the Board for an aggregate period of ten years prior to his retirement in 1929.

Subject to the sanction of Government, the Board approved a reduction in the docks wharfage rates for Gypsum imported in bulk and discharged (a) direct into open railway wagons, or (b) into mechanically-propelled road vehicles, from Rs.3—0—0 to Rs.1—8—0 and Rs.2—0—0 respectively per ton, plus 12½ per cent surtax.

The following expenditure estimates were sanctioned:—

Rs.14,855 for renewing sheets, tiles and battens of roof of " R " transit shed, Prince's Dock.

Rs.5,240 for repairs to masonry of the Communication Passage, Alexandra Dock.

The Board considered a reference from Government regarding the International agreement and rules relative to the Unification of Buoyage, and approved the terms of a reply agreeing to adopt the system.

The Board approved a draft representation to Government urging that the Government of India be moved to institute an enquiry into the serious diversion of inter-port coastal traffic between Calcutta and Bombay from the sea to the rail route on account of the abnormally low competitive rates of railway freight—in some instances less than one-third of the rates on non-competitive internal routes—now quoted by the Railways for inter-port goods traffic, with a view to elimination of wasteful competition and to co-ordination of transport facilities on lines best calculated to serve the trade interests of the country as a whole.

* * * *

Imports and Exports at the Port of Bombay:—

	1933 Quarter ended 30th June			1934 Quarter ended 30th June		
	Import Tons	Export Tons	Total Tons	Import Tons	Export Tons	Total Tons
Docks ...	526,936	429,128	956,064	512,626	496,846	1,009,472
,, (transhipment)	43,976	60,497	104,473	42,996	62,578	105,574
Bunders ...	243,757	57,180	300,937	262,858	63,701	326,559
Total from 1st Apr. to 30th June	814,669	546,805	1,361,474	818,480	623,125	1,441,605

Vessels other than ferry steamers, hired transports, Government vessels and country craft, which entered the Port of Bombay:—

	Quarter ended 30th June, 1933		Quarter ended 30th June, 1934	
	No.	Net Register Tonnage	No.	Net Register Tonnage
Vessels engaged in foreign trade ...	221	967,248	211	930,766
Vessels engaged in coasting trade ...	537	541,946	545	538,310
Total from 1st April to 30th June ...	758	1,509,194	756	1,469,076

At a meeting of the Trustees of the Port of Bombay held on 28th August, 1934, the following were the main items of business disposed of:—

The quotation of the Tata Iron and Steel Co., Ltd., for a supply of 7,000 steel sleepers for renewals on the Port Trust Railway during 1934-35 was accepted.

An estimated expenditure of Rs.21,300 against budget provision was sanctioned for constructing a 30 ft. road to serve Nos. 19 and 20 berths, Alexandra Dock Harbour wall, and to facilitate trooping arrangements.

The Board approved an application to Government for sanction to float during 1935 a loan of Rs.24,33,000 to repay the outstanding balances of certain loans advanced to the Bombay Port Trust by the Government of India in 1916 and 1917, and bearing interest at 4½ per cent., the whole amount of the new issue at 4 per cent. to be taken up for investment of the available cash balances of the Sinking and other Funds. The proposal will effect an annual saving of over Rs.7,000 in debt charges.

* * * *

At a meeting of the Trustees of the Port of Bombay, held on 25th September, 1934, the following were the main items of business disposed of:—

Subject to restriction of stacking to five bales high, the Board sanctioned a rebate of 50 per cent. on the rents of the jethas and open sheds at the Port Trust Cotton Depot.

An amendment of the Docks Scale of Rates was approved to provide for the levy of reduced wharfage at 12 annas per ton on coal in bulk discharged direct into open railway wagons.

An estimated expenditure of Rs. 5,961 against Budget provision was sanctioned for laying storm water drains in Arthur Bunder Road in connection with the development of the old Cotton Green into a residential area.

Port of London Authority

Twenty-fifth Annual Report for the Year ended 31st March, 1934

Trade of the Port

Shipping Arriving and Departing.

THE total net register tonnage of vessels that arrived and departed with cargoes and in ballast from and to foreign countries and British possessions and coastwise during the years ended 31st December, 1919-1933, was as follows:—

	Tons		Tons
1919 ...	26,335,191	1927 ...	52,576,755
1920 ...	32,758,604	1928 ...	55,423,681
1921 ...	34,089,783	1929 ...	57,578,355
1922 ...	39,293,139	1930 ...	58,085,598
1923 ...	41,214,928	1931 ...	56,074,556
1924 ...	45,392,649	1932 ...	53,903,886
1925 ...	47,064,975	1933 ...	56,480,004
1926 ...	49,278,173		

Imports and Exports.

The values of the total imports and exports (excluding coastwise goods and transhipments under bond) of the United Kingdom and of the Port of London for the year ended 31st December, 1933, were as follows:—

	1933 £	1932 £	Percentage Decrease on 1932
United Kingdom	1,092,005,898	1,117,715,325	2·3
London (including Queenborough)	406,045,615	409,371,649	0·8

The tonnage of imports and exports, foreign and coastwise, of the Port of London for the twelve months ended 31st March, 1934 and 1933, respectively, was as follows: —

	1934 Tons	1933 Tons	Percentage Increase on 1933
IMPORTS—			
Foreign	16,018,914	14,449,507	10·9
Coastwise	12,893,052	12,510,072	3·1
Transhipments ...	1,543,895	1,382,202	11·7
	30,455,861	28,341,781	7·5
EXPORTS—			
Foreign	2,800,414	2,796,269	0·1
Coastwise	1,968,448	1,801,610	9·3
Transhipments ...	1,543,895	1,382,202	11·7
	6,312,757	5,980,081	5·6
Total	36,768,618	34,321,862	7·1

Shipping Paying River Duties of Tonnage.

The total net register tonnage of vessels (including deck cargo tonnage) which, not being within the exempted classes, was liable to river duties of tonnage inwards or outwards, during the twelve months ended 31st March, 1934, and 1933, respectively, was as follows:—

		1934		1933		Percentage Increase on 1933
Foreign ...	Inwards	21,157,585		19,518,183		8·4
	Outwards	9,907,287		9,833,645		0·7
			31,064,872		29,351,828	5·8
Coastwise ...	Inwards	7,636,977		7,324,189		4·3
	Outwards	2,759,252		2,627,212		5·0
			10,396,229		9,951,401	4·5
			41,461,101		39,303,229	5·5

Shipping using the Wet Docks.

Of the above tonnage of vessels that paid river duties of tonnage, 59.3 per cent. used the wet docks of the Authority, compared with 60.1 per cent. during the twelve months preceding, as follows:—

		1934		1933		Percentage Increase or Decrease on 1933
Foreign ...	Inwards	14,921,845		13,914,228		+7·2
	Outwards	7,736,788		7,525,746		+2·8
			22,658,633		21,439,974	+5·7
Coastwise ...	Inwards	1,098,134		1,217,266		−9·8
	Outwards	816,199		958,034		−14·8
			1,914,333		2,175,300	−12·0
			24,572,966		23,615,274	+4·1

Shipping using the Dry Docks.

The shipping entering the dry docks of the Authority during the twelve months was 3,145,368 tons gross, compared with 3,279,618 tons in the previous year.

Goods dealt with at the Docks.

During the twelve months ended 31st March, 1934, the Authority landed or received 2,112,596 tons of import goods for warehousing or for immediate delivery, an increase of 110,706 tons, or 5.5 per cent. on the tonnage dealt with during the previous twelve months.

The stocks of goods at the end of March, 1934, in the warehouses directly controlled by the Authority amounted to 533,482 tons, as compared with 508,824 tons at the corresponding date in 1933, an increase of 24,658 tons.

The export traffic handled by the Authority on the dock quays during the twelve months amounted to 539,878 tons, being an increase of 44,289 tons on the previous year's figure of 495,589 tons.

Finance

Borrowing Powers Authorised and Exercised.

The balance of borrowing powers unexercised at 31st March, 1934, amounted to £4,692,042 as follows:—

	£	£
Total amount authorised		45,000,000
BORROWED—		
(a) Port Stock issued and outstanding ...	35,515,776	
(b) Port Stock purchased and extinguished	1,074,683	
(c) Port Stock redeemed	17,499	
(d) Withdrawn from Stock Redemption Funds	3,700,000	
		40,307,958
Balance of borrowing powers unexercised ...		£4,692,042

Stock to be Redeemed.

In January, 1934, six months' notice was given to redeem on the 1st August, 1934, the 4 per cent. Port of London "B" Stock, 1929-1969, amounting to £12,961,874.

Stock Issued.

On the 11th January, 1934, the Authority created and issued at the price of £100 per cent. £12,961,874 Port of London 3½ per cent. Registered Stock, redeemable at par on 1st August, 1975, the Authority having the option of redeeming the Stock in whole or in part at par on or after 1st August, 1965, on giving six months' notice.

The issue was made for the purpose of repaying on 1st August, 1934, the like amount of 4 per cent. Port of London "B" Stock, mentioned in the preceding paragraph, and offers were made to holders of that Stock to convert into the new Stock.

The Stock ranks as to security *pari passu* with the 3½ per cent., 4 per cent., 4½ per cent., and 5 per cent. Inscribed Stocks already issued.

Temporary Advances.

Temporary advances obtained during the year were repaid.

Capital Expenditure.

The Capital Expenditure for the year ended 31st March, 1934, amounted to £201,229.

Utilisation of Stock Redemption Funds in Exercise of Borrowing Powers for £350,000.

A sum of £350,000 from Stock Redemption Funds was used for Capital purposes in exercise of the Authority's borrowing powers.

Cancellation of Port Stock.

The powers conferred on the Authority by the Port of London Stock Regulations have also been exercised by the cancellation of the following Port Stock, representing investments of moneys standing to the credit of certain Redemption Fund Accounts:—

	£	s.	d.
3% "A" Port Stock, 1929-99	10,100	15	11
3½% Inscribed Port Stock, 1949-99	2,572	5	8
	£12,673	1	7

Stock Redemption Funds and Capital Redemption Account.

The amount standing to the credit of the Stock Redemption Funds at 31st March, 1934, was £428,795. The investments held on account of these Funds stand in the books at a value of £182,231, leaving a balance of £246,564 for investment, or to be used in exercise of Borrowing Powers.

Port of London Authority—continued

Supplementary to the Statutory requirements in regard to Port Stock, provisional Redemption Funds are in operation for the redemption of certain expenditure for which borrowing powers have not yet been exercised, and the balance of these Funds amounted at 31st March, 1934, to £143,162.

The Capital Redemption Account now stands at £3,531,986, representing an increase of £226,742 during the year.

Working Results.

The following is a summary of the year's working :—

	£
Total Revenue	5,324,929
Total Expenditure	3,872,276
Balance of Revenue	1,452,653
Less—	
Interest on Port Stock and Temporary Loans, Sinking Fund Charges, etc., *less* interest, etc., receivable	1,454,412
Deficit	1,759
Balance brought forward from 31st March, 1933	397,181
Leaving to be carried forward	£395,422

General Fund for the Maintenance and Renewal of Premises and Plant and for Dredging.

The balance standing to the credit of this Fund is £129,460, being a reduction of £16,795, which latter amount was expended during the year.

General Reserve Fund.

This Fund amounts to £1,000,000 and is fully invested in Trustee Securities, which stand in the books at less than mean market prices at 31st March, 1934. Since 1922 the interest on the investments has been credited to Net Revenue Account.

Insurance Fund.

This Fund now bears the cost of all the Authority's insurance, whether the risk is borne by the Fund or otherwise. The amount standing to its credit at 31st March, 1934, was as follows :—

	£
Amount at 31st March, 1933	638,994
Added since—Income accumulated from Investments ...	21,825
	660,819
Less—Losses, Reinsurances, etc., during the year	60,782
Amount at 31st March, 1934	£600,037

The investments held on account of the Fund stand in the books at a value of £623,555.

Auditor.

The Ministry of Transport re-appointed Lord Pender, G.B.E., of the firm of Deloitte, Plender, Griffiths and Co., to be Auditor of the Accounts of the Authority for the year ended 31st March, 1934, in accordance with the provisions of Section 109 of the Port of London (Consolidation) Act, 1920.

Works and Improvements

Progress of Works.

Surrey Commercial Docks.—In order to provide additional under-cover accommodation for the storage of softwood, the Authority has approved the erection of two blocks of Sheds at Station Yard as well as one block of Sheds at Stave Yard, and the work will shortly be commenced.

The Authority has also decided to provide additional cold storage accommodation at Canadian Produce Warehouses East.

India and Millwall Docks.—The work of adapting "A" Shed, West India Dock, for the accommodation of vessels discharging cargoes of fruit from the West Indies has been commenced.

Royal Victoria and Albert and King George V. Docks.—The new quay and jetty on the South side of Royal Victoria Dock, in connection with the erection of a flour mill by tenants, have been completed.

The re-conditioning of Sheds Nos. 25 and 27 on the North side of Royal Albert Dock is nearing completion.

Extensive alterations at "A" Berth, Royal Victoria Dock, to facilitate the handling of bananas and oranges are in hand.

Tilbury Dock.—No. 1 Shed has been specially adapted for importations of Canadian cattle.

General.—Various works have been carried out for the maintenance of the Authority's Undertaking, the more important items being flood prevention works at London Dock and Surrey Commercial Docks, repairs to certain quays and re-roofing of various sheds at Surrey Commercial Docks, and overhaul and repair of quay cranes at Royal Albert Dock.

Dredging.

During the year 1,197,565 cubic yards of material were removed from the river in order to maintain and deepen the channels.

The quantity of mud removed from the docks during the same period was 1,428,501 cubic yards.

General

Reduction in Rates.

A revised schedule of dock rates on softwood was brought into operation on the 1st January, 1934, and reductions have been made in dock rates on sugar as well as on sundry other goods.

Flood Prevention.

The Departmental Committee on Thames Flood Prevention appointed by the Minister of Health and of Agriculture and Fisheries in 1931, on which the Authority was represented by the General Manager, have presented a unanimous report to the Ministers.

The report recommends the co-ordination of the numerous Authorities responsible for the prevention of flooding in the tidal portion of the Thames, and for the setting up of a Joint Committee representative of those bodies whose function would be to conduct a thorough investigation of the question of flooding and approve a scheme of necessary works. Parliamentary legislation will be necessary before such a scheme can be brought into effect.

Wreck Service.

Twenty-four vessels were removed from the river by the wreck-raising plant during the year, viz. :—One steamer, measuring 1,281 tons, one tug measuring 79 tons, nineteen barges measuring 974 tons, and three small motor and fishing craft. In addition, one steamer measuring 7,472 tons and three barges measuring 120 tons were raised in the docks.

Parliamentary: London County Council (Money) Bill. 1933.

Provision was made in this Bill with respect to capital expenditure on (*inter alia*) unspecified works to Waterloo Bridge. The matter was of vital concern to the navigational interests, and in the circumstances a Petition was deposited by the Authority with a view to obtaining statutory protection to ensure that any grant secured by the Bill should not be expended on works that would involve an increase in the length of any of the tunnels between the abutments of the arches of the existing Bridge or in the length of the cutwaters or the diminution of headroom or clearance above waterline of the profile of any of such arches.

As the result of negotiations the Council furnished undertakings outside the Bill which adequately met the requirements of the Authority and the River Interests, and in consideration of this settlement the Authority's Petition was withdrawn.

Robert Boby, Ltd.

Messrs. Robert Boby, Ltd., of St. Andrew's Works, Bury St. Edmunds, have recently issued a most attractive folder, M.B.D.313, and this illustrates some of the various grain and malt cleaning and handling machinery which the firm have manufactured recently for various places.

The folder is composed of 16 illustrations and these include a dockside elevator; pneumatic intake plant; a grain gantry in course of erection; a vacuum pump for use with grain plant and a conveyor for cases.

Any of our readers who are desirous of obtaining a copy of this attractive folder can do so by writing to Robert Boby, Ltd., Bury St. Edmunds.

Seaborne Goods Traffic of the Weser Ports during August.

Turnover of the Lower Weser Ports during August, 1934, in seaborne goods traffic, altogether 571,663 tons, was 12,539 tons, or 2.1 per cent. less than that of the previous month. The chief cause of this was a not inconsiderable decrease of receipts from 297,832 tons in July to 241,813 tons in August, i.e., 18.8 per cent. On the other hand, departures at 329,850 tons, exceeded those of the previous month by 43,180 tons, or 15.2 per cent.

Of the total receipts of the Lower Weser Ports 204,754 tons (in the previous month 267,932 tons) or 84.7 per cent. (90.0) were discharged in Bremen city ports. This is a reduction of arrivals compared with the previous month by 23.6 per cent. Nearly all the more important goods (vegetable spinning materials, ores, metals, grain, oil seeds, oils, mineral oils, coal and coke) showed decreases in importation compared with July. Only phosphate, flour, timber and wooden goods showed slight increases over the previous month.

The Bremen city ports participated in the total traffic of the Lower Weser ports with 267,685 (256,697) tons or 81.2 per cent. (89.6). Goods traffic, therefore, increased by 4.3 per cent. Chiefly stones and earth, potash salts, metals and metal goods, flour, fruit and paper and coke were transported in larger quantities than in the previous month, and more than counterbalanced considerable falling-off in the transport of coals, cellulose and wooden goods.

News from all Quarters

South Africa

THE preliminary survey of the problems of the Cape Town docks has now been completed by the Harbour Commission.

The Commission, consisting of Mr. Gerhard Nijhoff, the eminent Dutch engineer, and Mr. C. C. Geertsema, his assistant, has left for other coast ports. The members of the Commission will stay for two days at Port Elizabeth, and two days at East London, where they will carry out preliminary investigations. They will then proceed to Durban, where they will stay for about ten days before returning to Cape Town.

It is expected that the Commission wil take about three months to complete its task; but no formal hearings of evidence are being held, as was the case in the Granet Railway Commission.

Mr. Nijhoff and Mr. Geertsema are going into the technical questions involved with great thoroughness and have made good progress with work of a preliminary nature.

The traffic through the main ports of South Africa for the month of July, 1934, will be seen from the following table:—

	Cape Town	Port Elizabeth	East London	Durban
Number of Ships	149	71	95	607
Freight in tons—				
Unloaded ...	78,500	55,300	17,000	97,000
Loaded ...	22,600	19,000	4,800	154,100
Reloaded ...	800	100	-	900
Total ...	101,900	74,000	21,800	252,000

Brazil

An agreement has recently been concluded between the Brazilian Government and the State of Sao Paulo whereby the latter is to have control of the old harbour of Sao Sebastiao for sixty years. In exchange for this concession, the State of Sao Paulo is to reconstruct the port and to build two new communicating roads, the first to connect it with Sao Paulo, and the second with the southern road network of the State of Minas Geraes. The harbour reconstructions must commence within a year of the signing of the agreement, and at the end of the sixty years the Brazilian Government will automatically regain control of the port without payment.

Mexico

During the 1933-34 year (from August 1, 1933, to July 31, 1934) the Mexican Government has carried out a number of measures for the improvement of the harbours of the country. A sum estimated at £25,000 has been expended in dredging operations in the estuary of the Panuco River in the Gulf of Mexico, and the canal leading southwards from Tampico to Tuxpan has also been deepened so that it is now capable of taking ships of a draft of up to 12 feet. With the co-operation of the Board of the State Railways, the harbour walls of Tampico have again been strengthened. The work on the mole in Campeche is practically finished, those of Vera Cruz and Puerto Mexico are being improved, and a new one is under construction at Todos Santos in the south part of Lower California. Work on the fresh water supply system of the harbour of Acapulco is now completed, and work on that of the harbour of Manzanillo is proceeding satisfactorily. Ten guide lights have been equipped for acetylene lighting and the lighthouse on the island of San Benito off the Pacific Coast is already working.

U.S.A.

The following table shows the traffic in the harbour of New York during the second quarter of the current year:—

	Entering No. of Ships	N.R.T.	Leaving No. of Ships	N.R.T.
April ...	428	2,118,000	427	2,056,000
May ...	443	2,154,000	466	2,234,000
June ...	446	2,232,000	481	2,369,000

It will be seen that there was thus a continued improvement throughout the months of May and June. This was, however, limited to the ocean-going traffic, the coastal traffic being unfavourably influenced by the strike of the dock hands on the Pacific Coast.

In order still further to increase the traffic in the harbour, the Dock Department has decreed as from July 1, 1934, 20 per cent. reductions in a number of pier dues which have only been in force since December 19, 1928. No refunds are to be made on dues already paid, and the reduction will naturally not apply to the rates fixed for the large shipping companies.

Canada

The Halifax Harbour Commission report states that during the month of August, 1934, a total of 458 vessels entered and cleared the port of Halifax as compared to 425 for August, 1933, and 424 for August, 1932.

The net registered tonnage is reported at 524,088 tons as compared to 460,770 tons for August, 1933, and 724,478 tons for August, 1932.

The number of vessels engaged in the Trans-Oceanic service entering and clearing during the month of August, 1934, is reported at 107 as compared to 164 for August, 1933, and 148 for August, 1932.

The number of vessels engaged in the coastwise trade entering and clearing during the month of August, 1934, is reported at 351 as compared to 261 for August, 1933, and 276 for August, 1932.

Since January 1st, 1934, the total number of vessels arriving and departing at the port of Halifax is reported at 3,393, as compared to 3,080 for the same period of 1933, and 3,091 for the first eight months of 1932.

The total cargo tonnage handled inward and outward during August, 1934, is reported at 128,403 tons as compared to 177,310 tons for August, 1933, and 110,205 tons for August, 1932.

Since January 1, 1934, the total cargo tonnage handled inward and outward amounted to 1,371,534, as compared to 1,058,593 tons for the first eight months of 1933.

Australia

The Melbourne Harbour Trust Commissioners have accepted a tender for the erection of a bridge at the foot of Station Pier, as the first step towards the provision of a striking entrance to the city.

The bridge will cost £58,069, and will contain a central roadway 65 ft. in width, in which will be placed two tramlines. The approach to the pier will be 64 ft. 6 ins. in width, with pathways on either side. It is expected that construction will be commenced immediately.

The total import of merchandise at Port Okha during the month of July, 1934, amounted to 3,889 tons valued at £36,365, and the exports to 7,098 tons.

Japan

The following table gives in million yen a comparative survey of the growth in the value of the goods handled in the harbours of Yokohama, Kobe, and Osaka during the first seven months of each year from 1931 to 1934:—

	Yokohama	Kobe	Osaka
	IMPORT		
1931 ...	187	306	134
1932 ...	213	341	169
1933 ...	278	398	263
1934 ...	305	451	315
	EXPORT		
1931 ...	203	246	136
1932 ...	172	246	156
1933 ...	164	352	241
1934 ...	266	435	328

It will be seen from the above table that the most remarkable change has been the rise of Osaka from the position of relative unimportance to that of the rival of Yokohama. Even taking into account the fact that the latter harbour can coant upon handling the majority of the silk exports during the season at the end of the year, the advantages of Osaka seem certain of securing a still greater share of the traffic which formerly passed through Yokohama.

The control of the harbour of Osaka is in the hands of the Osaka Hokko K.K., a company formed in 1919 with the co-operation of the Sumitomo Company and with a capital of 35,000,000 yen fully paid in. The company is now occupied with a plan for extensive additions to the harbour facilities in order to cope with the increase in traffic and maintain the lead gained over Yokohama. An area of 336,000 tsubos is to be reclaimed from the sea, and storehouses, offices, and dwelling houses are to be erected on it. Dredging operations are to be carried out in the channels, and quays, breakwaters, moles, and roads are to be constructed. The total cost of the above works is estimated at 11,700,000 yen.

U.S.S.R.

A harbour is shortly to be constructed at Mariupol in order to permit large tank vessels to approach the Mariupol naphtha refineries direct. This will represent a considerable saving, as the naphtha had formerly to be transported from Baku to Mariupol by rail, a longer and more expensive journey.

News from all Quarters—continued

China

The Lunghai Railway authorities have long desired to make it possible for goods to be transferred direct from ship to train at Haichow, the end station of the line. They have now completed the construction of a shipping quay which will make this practicable.

During the first half of the current year the number of ocean-going ships entering the harbour of Shanghai was 1,029 with 4,548,868 N.R.T. and the number clearing was 939 ships with 4,301,950 N.R.T. The number of coastal vessels entering during the same period was 3,336 with 4,500,690 N.R.T., and the number clearing 3,437 with 4,598,166 N.R.T.

The following table shows the value of the goods imported and exported for the above periods:—

	Gold Units	Standard Dollar
IMPORTS		
First quarter, 1934 ...	92,377,276	177,491,343
Second quarter, 1934 ...	78,312,934	158,891,850
Total for first half year	170,690,210	336,383,193
EXPORTS		
First quarter, 1934 ...	32,263,071	61,940,375
Second quarter, 1934 ...	35,073,178	71,375,160
Total for first half year	67,336,249	133,315,535

Spain

The official Spanish bulletin has published a decree according to which the Cabinet is authorised to lay before Parliament a bill providing for the creation of a free harbour in Valencia. The State would subsidize the project to the extent of 500,000 pesetas (about £14,300) during 1935, of 1,000,000 pesetas during 1936, and of 1,500,000 pesetas during the period 1937-1965.

Sweden

It is expected that the turnover of the harbour of Malmö for the current year will amount to about £150,000, which will represent a 40 per cent. increase over the previous year's figure. Both import and export traffic are at the moment so lively that in some cases delay has been caused at the Customs.

The traffic in the free and toll harbours of Stockholm amounted to 321 ships in September of the current year as against 409 in August, 1933, and 305 in September 1933.

Norway

The A/S Oslo Havnelager has taken over a large warehouse from the bankrupt A/S Oslo Frilager, and is now opening it for use. It contains seventy rooms, some of which are equipped for cold storage, and all of which are capable of accommodating any kind of goods.

Plans have been made for the building of a new grain silo at a cost of £125,000. It is expected that work will be started at the beginning of November this year, provided that the tenders can be submitted and awarded before then.

Malaya

The total tonnage of the trading vessels (including native craft) entering and leaving the harbour of Singapore during the second quarter of the current year amounted to 7,563,280 n.r.t., as compared with 7,667,865 n.r.t. in the first quarter of 1933. Out of this figure trading vessels of over 75 n.r.t. amounted to 7,227,051 n.r.t. (in the first quarter of 1933, 7,384,681 n.r.t.) and trading vessels of 75 n.r.t and under, including native craft, to 336,229 n.r.t. (283,184 n.r.t.). The number of ocean-going steamers with cargo entering during the period under review was 1,477 with 3,573,807 n.r.t., and the number leaving was 1,417 with 3,438,711 n.r.t. The number of ocean-going steamers with ballast was 14 with 23,292 n.r.t. entering and 65 with 120,204 n.r.t. leaving. The number of coastal boats over 75 n.r.t. was 228 with 86,033 n.r.t. entering and 226 with 85,004 n.r.t. leaving.

Poland

In the month of August the total goods traffic in the harbour of Gdingen amounted to 662,000 tons, as compared with only 580,000 tons for July. The August figure establishes a new record for the harbour, the previous record having been 640,000 tons for the month of November, 1933. This record figure was reached on the strength of the exports alone, which amounted to 574,000 tons, an increase of 95,000 tons over the July figure. The imports registered a drop of 20,000 tons, as compared with July, 1933.

Lloyd's Register Shipbuilding Returns for Quarter ended 30th September, 1934

THE statistics issued by Lloyd's Register of Shipping regarding merchant vessels under construction at the end of September last show that in Great Britain and Ireland there is an increase of 17,154 tons in the work in hand as compared with the figures for the previous quarter, and also that the present total—604,296 tons—is 300,534 tons (99 per cent.) greater than the tonnage which was being built at the end of September, 1933.

While the increase during the last three months has been small, the quarterly total of tonnage in course of construction maintains the upward tendency noted since the beginning of 1933. At the end of September, the tonnage on which work was suspended amounted to 50,068 tons, being composed entirely of steamers.

About 82,000 tons—13.6 per cent. of the tonnage now being built in this country—are intended for registration abroad or for sale.

The tonnage now under construction Abroad*—707,091 tons—is about 78,000 tons more than the work which was in hand at the end of June, 1934, and is the highest quarterly total recorded since June, 1932. Tonnage, included in the total in hand abroad, on which the work has been suspended amounts to 3,035 tons of steamers and 35,778 tons of motor ships.

The leading countries abroad are:—Japan, 149,750 tons; France, 120,868 tons; Germany, 120,816 tons; Denmark, 74,938 tons; Holland, 70,735 tons; and Sweden, 64,565 tons.

The total tonnage under construction in the World* amounts to 1,311,387 tons, of which 46.1 per cent. is being built in Great Britain and Ireland, and 53.9 per cent. abroad. The World total shows an increase of 95,000 tons over the figures at the end of June last, and is the highest recorded since December, 1931.

In Great Britain and Ireland, 76,911 tons were commenced during the last three months, showing a decrease of 69,742 tons compared with the corresponding total for the June quarter. During the quarter ended September, 1934, 183,422 tons were launched in Great Britain and Ireland, an increase of 147,468 tons as compared with the June quarter. Similar figures for abroad are 181,177 tons commenced, and 123,375 tons launched, showing an increase, as compared with the previous quarter, of 55,265 tons in the tonnage commenced, and of 9,937 tons in the tonnage launched.

Steam and motor oil tankers under construction in the world amount to 43 vessels of 324,712 tons, of which 13 vessels of 101,500 tons are being built in Great Britain and Ireland, 6 vessels of 44,100 tons in Denmark, 5 vessels of 43,200 tons in Sweden, 6 of 40,270 tons in Holland, 6 of 38,150 tons in Germany, and 3 of 19,842 tons in the United States of America.

Of the 604,296 tons under construction in Great Britain and Ireland at the end of September, 291,517 tons consisted of motor ships, while at the same date the motor ship tonnage being constructed abroad (473,392 tons) was 242,933 tons in excess of that of the steamers.

The vessels being built in the world at the end of September include 6 steamers and 24 motor ships of between 8,000 and 10,000 tons each; 3 steamers and 18 motor ships of between 10,000 and 20,000 tons; and 4 steamers and 2 motor ships of 20,000 tons and upwards.

The table respecting marine engines shows that the horse-power of steam engines now being built or being fitted on board amounts to about 739,000 h.p.; this figure includes 46 sets of turbine engines of about 616,000 shaft horse-power. The horse-power of the steam reciprocating engines (about 123,000 h.p.) amounts to 8.4 per cent. of the total horse-power of marine engines now being built in the world. The figures for oil engines aggregate approximately 729,500 h.p.

Tonnage to Lloyd's Register Class.—Of the merchant shipbuilding in hand throughout the world at the end of September, 966,690 tons, or nearly 74 per cent., are being built under the inspection of Lloyd's Register. Of this total, 566,547 tons, representing nearly 94 per cent. of the tonnage being built there, are under construction in Great Britain and Ireland; while, of the tonnage being built abroad, 400,143 tons, or nearly 57 per cent., are being constructed under the inspection of Lloyd's Register.

* Excluding Russia, for which no figures are available.

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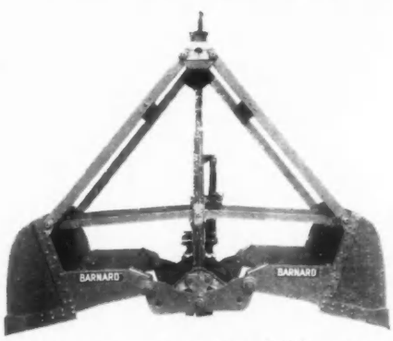
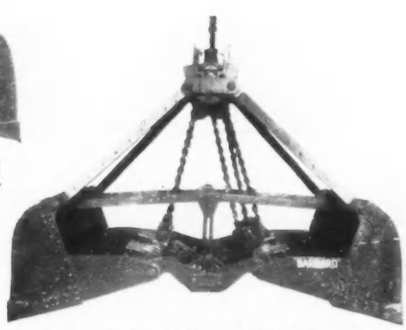


"Barnard" Patent Single Chain Self Dumping and Hand Tipping Type Combination Grab.

30% GREATER OUTPUT OF LUMPY MATERIALS GUARANTEED



"Barnard" Patent Single Chain Button Ring Discharging Combination Grab.

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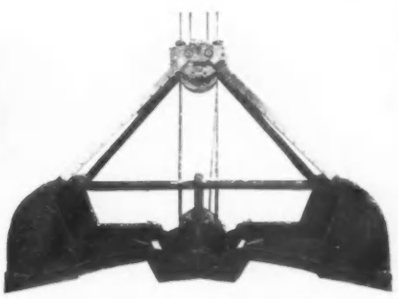

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Irish Harbour Matters

Galway

Trans-Atlantic Liners still to call at Galway.

CONCERNING the rumours to the effect that trans-Atlantic liners would reduce, if not abandon their calls to Galway, the Limerick Steamship Co., Irish Agents for the North German-Lloyd Co., have written to the Galway Harbour Board stating that, on the contrary, that Company intends maintaining regular sailings. As a concrete proof, the sailing list just issued for 1935 provides for a regular service and additional calls at Galway.

Atlantic Liner calls at Galway.

The Cunard White Star, Ltd., in the course of a letter to the Galway Harbour Board denies the report that its liners will discontinue the inward and outward calls at Galway. It will be recalled that a special Bill to provide for the development of the harbour at Galway has been introduced in the Free State Dail (Parliament), and the harbour board are requesting the Government to expedite its passage. Arrangements have just been concluded for the installation of wireless apparatus on board the harbour Commissioners tender.

Dublin

Increased Trade at Dublin Port.

The Dublin Port and Docks Board is able to report an increase in the amount of shipping entering the port, as compared with last year.

For the nine months ended 30th September last, 1,890,608 tons of shipping entered, an increase of 130,000 tons on the corresponding period of last year. Of this total, 1,092,724 tons were cross Channel and coastwise trade; and 797,884 tons foreign. Dues on foreign traffic increased by £4,462 to £29,424. Cross Channel and coastwise traffic, however, showed a revenue decrease of £276. This is stated to be due to the fact that pilgrim ships, coming from Liverpool enter as "cross Channel" traffic, though they subsequently take a "foreign" route to Lourdes or Rome.

During the nine months under notice, goods entering the port paid dues amounting to £48,087, an increase of £5,339 on 1933. Goods being exported yielded £14,412, an increase of £746.

Reporting on a suggestion that liner traffic would increase if tenders were provided for embarking and disembarking passengers, the Harbour Master stated that he did not think this would be an additional inducement to the Companies concerned, and the expenditure would not be justified. The situation of Dublin Bay made this method of embarking or disembarking impossible in bad weather. Also, the Board's two sea-going tugs were capable of taking more than 500 passengers between them.

The four liners which had already come to Dublin Bay this year had come directly to the port without any difficulty, and the Cunard-White Star Co. had been pleased with the success of their venture, so that as many, if not more, liners might be expected next year. Extra dredging to maintain the deep passages would be necessary, and the Harbour Master recommended that this should be considered when tonnage dues were fixed on these liners.

Mr. P. McGrath hoped they were not going to leave the question of the liners in this way. This was an immense source of untapped revenue. He was thinking not only of pilgrim ships, but of regular cruising liners and Atlantic liners from Liverpool. Dublin was as convenient on the Atlantic route as Galway. The competitors in Cork laid great stress on this matter, and last month had cut their rates by 50 per cent., charging only one half-penny a ton for anchorage. A liner which called at Cork last month, for instance, would pay £61, but if she came to Dublin to embark and disembark passengers it would have cost £270.

Mr. C. M. O'Kelly, vice chairman, who presided, pointed out that there was no charge for anchorage in the Bay.

Mr. McGrath asked what was the use of anchorage if they had no tenders. They must reduce their tonnage dues.

The matter was referred to the Financial Committee.

Launch of Collier for Gas Company.

The "Glencree," a collier capable of carrying nearly 500 tons of coal, was launched from the shipyard of Vickers (Ireland), Ltd., into the Alexandra Basin, Dublin, by Mrs. W. J. Grey, wife of the general manager of the Alliance and Dublin Consumers' Gas Company on September 27th.

This vessel, which has been constructed to the order of the Dublin Gas Company, for their cross-Channel traffic, has an overall length of 148 ft., and a breadth of 25 ft. 10 in. In its design special regard is taken of the fact that she had to negotiate the somewhat difficult Camden Lock when entering the Ringsend Basin, Dublin, and the "Glencree" will be able to pass through this lock on any tide. She is constructed of mild steel to the highest class of Lloyd's, and was built under survey. The "Glencree" is of the long raised quarter type with machinery aft, and has large holds entirely free from obstruction, thus giving the most efficient storage space. The cargo is worked through self-trimming hatches of large size designed specially for quick loading and unloading.

The engine equipment will consist of triple expansion engines supplied from a marine type boiler working at a pressure of 200 lbs. per square inch.

Wexford

Harbour Improvement Scheme.

Members of Wexford Harbour Board recently waited on Wexford Co. Council to ask that body's assistance in carrying out a £170,000 scheme for the improvement of the harbour.

Mr. R. Houston, Chairman of the Harbour Board, said that last year the Co. Council had been good enough to grant the proceeds of a penny rate in the pound towards the improvement of the harbour. In connection with the scheme, representatives of the Board interviewed officials of the Dept. of Industry and Commerce, who were favourable to the scheme, but said that the local authorities were not backing the Harbour Board strongly enough.

The harbour had been surveyed by Messrs. Grantham, and their first report was for £80,000, but the Board was not satisfied, and called in a Dutch firm whose lowest tender was £170,000. The Dutch firm guaranteed to give 15 ft. of water at low water spring tides. That meant that they could bring in ships of from 2,000 to 5,000 tons capacity, the only kind that it would pay to run now. At present they could only take in a vessel of 250 to 300 tons.

Alderman R. Corish, T.D., gave notice of motion that the Council raise 3d. in the £ for forty years towards the cost of improving Wexford Harbour. He also asked that a special meeting be held to consider the matter, so that the introduction of a private Members' Bill would be facilitated.

It was decided to hold a special meeting of the Wexford Co. Council.

Cork

Cork Pilotage Rates Reduced.

In order to encourage the visits of cruising liners to Cork, the Cork Harbour Board has reduced its pilotage and berthing rates for this class of ship from £20 to £13 6s. 8d., and in cases where the shipping companies provide their own landing facilities the charge will be £10.

Increase in Shipping Traffic at Reval.

The number of ships to enter the harbour of Reval during the first half of the current year was 1,160 with 370,166 n.r.t., and the number leaving amounted to 1,201 with 377,924 n.r.t. This makes the total traffic figure 2,361 vessels with 748,090 n.r.t., which shows a considerable improvement over the figure for the first six months of the previous year, which was 2,013 ships with 611,753 n.r.t.

Traffic at Belgian Ports in August.

In the month of August 81 sea-going vessels with a cargo of 31,550 tons entered the harbour of Brussels, as compared with 91 ships carrying 38,321 tons of cargo in the month of August, 1933. The number of ships leaving the harbour for the same periods was 81 with a total cargo of 46,970 tons, as compared with 92 ships with 46,853 tons.

The number of ships entering the harbour of Antwerp for the same month was 914 with 1,782,355 n.r.t., as compared with 873 ships with 1,845,433 n.r.t. during August, 1933.

After the depressed state of traffic in the harbour of Ghent in January and February of the current year, a slow but steady improvement has set in from March onwards. In August the traffic amounted to 176 ships with 212,326 n.r.t.—an increase of 7 per cent. over the figure for the same month of the previous year. In the first eight months of the current year 1,276 sea-going vessels with 1,381,106 n.r.t. entered the harbour, as compared with 1,208 ships with 1,324,177 n.r.t. for the same period of the previous year. It is hoped that an increase in the goods traffic will make further development possible.